Biographical Encyclopedia of Astronomers

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Müller, Johann

Born Died Königsberg, (Bavaria, Germany), 6 June 1436

Rome, (Italy), 8 July 1476

Johann Müller (Regiomontanus) published valuable astronomical ephemerides and mathematical texts and devised new instruments and methods of observation. He was to 15th-century astronomy as Nicolaus Copernicus and Tycho Brahe were to 16th-century astronomy.

Johann Müller himself used the scholarly name "Johannes de monte regio" or similar names. Though he evidently never used it himself, since the 16th century he has been known as Regiomontanus, from the Latin for Königsberg (King's mountain).

Young Johann was a child prodigy and was sent to the University of Leipzig at the age of 11. Three years later, he visited Vienna and stayed on as a student under Georg Peurbach at the university there, receiving his bachelor's degree in 1452 (at age 15). Upon receiving his master's degree in 1457, Regiomontanus was appointed to the University of Vienna's faculty. He was tremendously knowledgeable about ancient, medieval, and contemporary scholarly works, and he knew Latin and Greek.

A visit by Cardinal Bessarion to Vienna in 1460 led to Regiomontanus traveling to Rome and many other places in Europe, before settling in Nuremberg in 1471, where he set up a print shop to publish scholarly works with technical diagrams. As was typical of the astronomers of his day, Regiomontanus was very much both an astrologer and an astronomer, though he seemed to spend more time in his later years on astronomical science and mathematics than on astrology. He was also a religious man, and his personal trademark sign was a cross on a hill with a background of stars. Regiomontanus was supposedly called by the Pope to Rome in 1475 or 1476, where he died of unknown causes (though the plague has been suggested as a possibility), suddenly terminating an increasingly productive career in revolutionizing astronomy.

Johann Gutenberg had published the first printed astronomical calendar in 1448, and while at Leipzig, young Regiomontanus was drawn toward checking the accuracy of that calendar, finding errors between the predicted positions of the planets and their true locations in the sky. This led him on an intense astronomical career to build an improved astronomy that would forever hold him as the foremost astronomer of 15th-century Europe During his lifetime, Regiomontanus had a significant impact by traveling to visit astronomers elsewhere, corresponding with them in technical discussions, seeking out classical writings on astronomy and encouraging the publication of new translations of them, and by writing and publishing his own widely consulted works on astronomy. Among those with whom Regiomontanus dealt was Paolo Toscanelli of Florence, who made perhaps the most accurate positional observations of comets in the 15th century. One of the problems that Regiomontanus eagerly tackled was that of a comet's position, size, and distance, and his "Sixteen Problems" regarding these

unknown quantities became a much-cited work after Johann Schöner's publication of the manuscript in 1531, upon the appearance of Halley's comet (IP/Halley).

Regiomontanus' *Ephemerides* were heavily used in Europe because they were seen as authoritative in predicting eclipses, phases of the Moon, positions of the Sun, Moon, and planets, and church calendar information. One of the reasons that ephemerides such as these were so popular was the strong European adherence to astrologery in that era. Copernicus and Christopher Columbus both annotated their own copies of Ephemerides, and it has been argued that both Columbus and Amerigo Vespucci must have used Regiomontanus' almanacs on their voyages overseas; Columbus likely used his copy to impress the American natives in Jamaica by successfully predicting the lunar eclipse of September 14, 1494. Copernicus was heavily influenced by Regiomontanus' *Epitome* and *Ephemerides* in his writing of *De revolutionibus*

Regiomontanus wrote an impressive book, *De triangulus omnimodis* (On Triangles), a treatise on plane and spherical trigonometry that was first published in 1533. This book was widely used by European astronomers in the 16th and 17th centuries to determine celestial positions. Regiomontanus wrote this organized text on geometry and trigonometry specifically for use by astronomers, realizing that they needed these mathematical tools to advance their knowledge of the motions of celestial objects. Even though his treatise was built on the work of ancient and medieval mathematicians, Regiomontanus added his own theorems and employed algebraic techniques for solving geometric problems; he utilized his geometric procedures in his other astronomical work, as can be seen in his treatise on comets

Regiomontanus was also interested in making astronomical instruments for improved astronomical observations—one of the essential ingredients for building a better astronomy. Making better clocks seems to have been a part of these endeavors, as he attempted to construct a planetary clock. Had Regiomontanus lived to old age, his impact on astronomy would undoubtedly have been much greater, given his talents and enthusiasm. He envisaged publishing many more books on astronomy, translations into Latin of historical works, and also many of his own new works on the subject.

Numerous manuscripts and letters written by Regiomontanus are extant in various libraries, attesting to a prolific career of correspondence and writing on astronomical and mathematical topics. His instruments, books, and papers passed to Bernard Walther of Nuremberg at the death of Regiomontanus. Walther kept these estate items to himself, unwilling to share them, until his death in 1504, when they began to be scattered through various sales. Schöner purchased much of the estate material on astronomy belonging to Peurbach, Regiomontanus, and Walther around 1522, eventually publishing much of the unpublished material of the three men. Even the famous artist Albrecht Dürer eventually purchased Regiomontanus' copy of Euclid's *Elements* at auction

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Alternate name

Regiomontanus

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