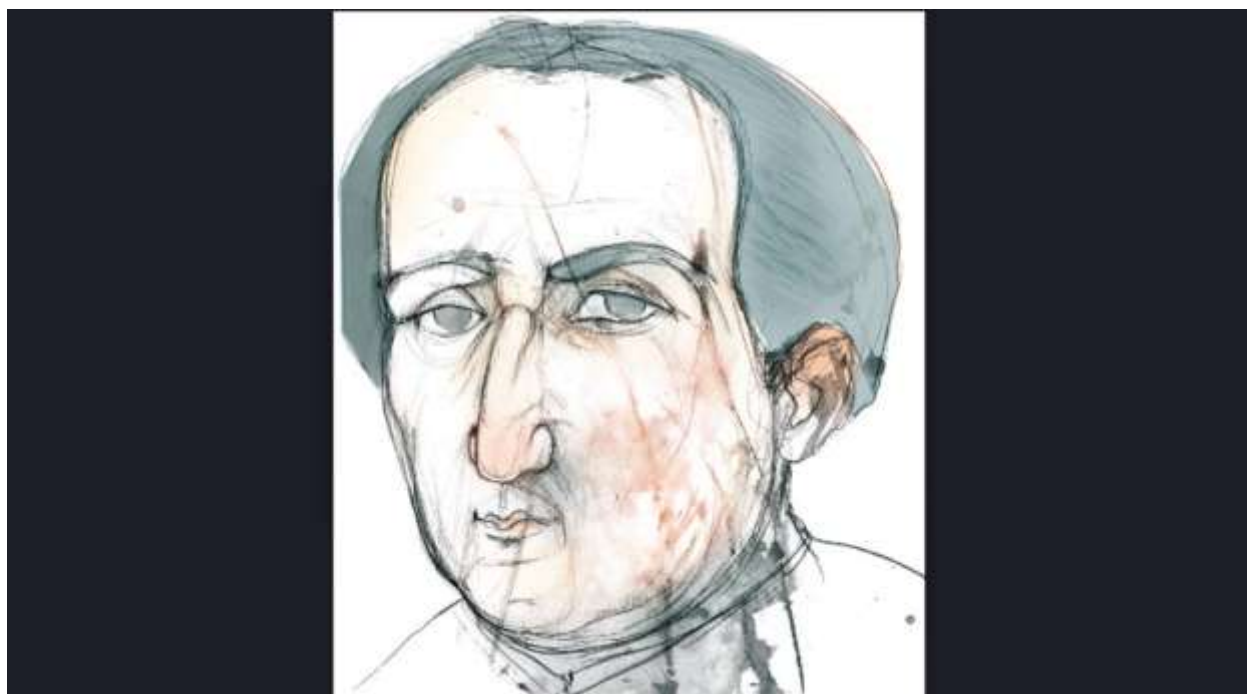


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On Columbus Day, remember Abraham Zacuto, the Jewish astronomer history forgot

The life of Abraham Zacuto joins two strands of Sephardic history: persecution and exile, and the transmission of knowledge, texts and technologies across borders.

[Rabbi Shlomo Pereira](#) October 12, 2026



Portrait of Abraham Zacuto, by Eulogia Merle (2011) (Wikimedia Commons)

Every October, Christopher Columbus returns not only as history but as controversy. The voyages associated with his name transformed the world, but their legacy is inseparable from conquest, coercion and the destruction that followed European expansion.

Yet the same Iberian age also produced a quieter and far less controversial revolution: advances in astronomy, mathematics, cartography, instruments and practical navigation that made sustained oceanic voyaging possible. Its protagonists included scholars, translators, mapmakers, instrument makers and pilots whose names are far less familiar than those of the captains who commanded the ships.

Among them, one figure deserves particular remembrance on Columbus Day: Abraham Zacuto, a Jewish astronomer born in Salamanca around 1452. Zacuto belonged to the same Iberian world as Columbus, but experienced its monarchies very differently. In 1492, Columbus sailed west under the patronage of Ferdinand and Isabella. That same year, the Catholic monarchs ordered the Jews of their realms to convert or leave. Zacuto left Castile and continued his work in Portugal. The celebrated maritime discoveries and the expulsion of Iberian Jewry were therefore not distinct historical worlds; they unfolded under the same rulers, at the same moment, within the same culture of ambition, knowledge and power.

Zacuto stands out within that larger scientific story. He was a rabbi, astronomer, mathematician and historian whose astronomical work helped give oceanic navigation a new degree of precision and practicality. His contribution belongs not at the margins of the Age of Exploration but within the scientific infrastructure that made long-distance navigation increasingly systematic.

Around 1478, Zacuto completed his great Hebrew astronomical work, “Ha-Hibbur ha-Gadol,” the “Great Composition.” Working within a long scientific conversation that included Greek, Islamic, Jewish and Christian astronomy, he refined and organized astronomical calculations in forms of exceptional practical value.

After the expulsion from Spain, Zacuto entered Portugal at precisely the moment when the kingdom was pushing maritime exploration farther into the Atlantic and down the African coast. Zacuto’s pupil, José Vizinho, a Jewish adviser to Portuguese King John II, was associated with the practical Latin and Castilian presentation of Zacuto’s astronomical material. In 1496, Zacuto’s Almanach Perpetuum was printed at Leiria in four known issues – three with Latin preliminary matter and one with Castilian.

The importance of those tables was intensely practical. They supplied precise, ready-to-use values for the changing position of the sun through the year. For a pilot on the high seas in daylight, far from recognizable coastlines, this meant that a noon observation of the sun could be combined with solar-declination data to determine latitude — the ship’s north-south position. The difficult astronomical calculations had already been embodied in the tables. What remained aboard ship was an operational procedure: Observe the sun, consult the appropriate value and calculate latitude. That combination of precision and usability greatly facilitated daytime position-finding at sea. Solar tables derived from Zacuto’s work entered early Portuguese navigational manuals and became part of the practical scientific culture of oceanic travel.

The clearest measure of Zacuto’s importance may be what happened next. The Almanach did not remain a local Portuguese publication. Its tables were reprinted repeatedly in

Venice in 1498, 1502, 1525 and 1528. A work first printed in Leiria moved into one of Europe's great publishing centers and continued to circulate for decades. That publishing history alone tells us something about the standing Zacuto's astronomy acquired.

Its reach extended farther still. Zacuto's astronomical material was translated and adapted into Arabic. One Arabic version was produced, likely in Istanbul, in 1505-06; another, associated with Ahmad ibn Qasim al-Hajari in Morocco around 1624, survives in several manuscripts. The work of a Jewish astronomer writing in Hebrew in 15th-century Salamanca had crossed into Latin, Castilian and Arabic scientific cultures.

Zacuto's name also became entwined with the memory of the great navigators. Accounts have long connected his tables with Columbus and Vasco da Gama, including the famous 1504 lunar eclipse in Jamaica. In this episode, Columbus intimidated Indigenous Jamaicans by predicting the disappearance of the moon, relying on Zacuto's almanac, which he had on board. A manuscript connected with the Almanach also survives in Seville's Biblioteca Colombina, the library created by Columbus's son Hernando. Taken together, these associations reveal the stature Zacuto's work acquired in the historical memory of the Age of Exploration.

Perhaps the most striking part of Zacuto's story is what happened to the man himself. Portugal valued the kind of expertise he represented. Yet in December 1496, King Manuel I ordered Portugal's Jews to leave unless they converted, and in 1497 the crown subjected the Jewish population to mass forced conversion. Zacuto left Portugal as well.

Exile did not end either his travels or his scholarship. From Portugal he moved through North Africa, including Tunis, before eventually reaching Jerusalem. There, late in life, he returned once more to the astronomical work that had made his name known across the Mediterranean, recalculating and updating his earlier tables for the Jewish calendar and the meridian of Jerusalem. The strongest recent reconstruction of his life places his death in Jerusalem in Tevet 5274, or late 1513 or very early 1514 — commonly given as 1514.

Zacuto's story is therefore larger than a footnote to Columbus. It joins two strands of Sephardic history too often told apart: persecution and exile, and the transmission of knowledge, texts and technologies across borders.

Zacuto's own tables and 15th-century procedures are now obsolete, but their underlying navigational logic endures. Modern celestial navigation still determines position by combining observations of the sun, moon, planets or stars with authoritative astronomical data. The U.S. Naval Academy requires all midshipmen to study navigation, and its current curriculum includes celestial navigation alongside electronic methods. The U.S. Naval Observatory still describes celestial navigation as a critical independent backup to GPS

and other electronic systems. And the Nautical Almanac, first published in 1855, remains the standard U.S. Navy resource for marine celestial navigation. The instruments and calculations have changed, but the essential logic remains: Observe the heavens, consult reliable astronomical data and determine position.

Zacuto's scientific reputation also survives in an unexpected place. In 1935, the International Astronomical Union formally adopted the name Zagut for a lunar crater honoring Abraham ben Shmuel Zacuto. Modern astronomy has, quite literally, written his name onto the Moon.

Columbus remains a household name because voyages leave dramatic images: ships, landfalls, encounters and conquest. The calculations, tables, instruments, translations and printed books that made such voyages possible are easier to forget. Remembering Zacuto widens the story: His tables brought greater precision and practicality to daytime navigation; his work crossed languages and continents; and his life traced the routes of Sephardic exile from Iberia to Jerusalem. The age of maritime discovery was also an age of scientific discovery, and some of the knowledge that carried Iberian ships across oceans was created by scholars whose communities those same monarchies expelled.