

Winter Holidays Exhibit Guide

A joint exhibition in the University of Oklahoma Libraries of
the History of Science Collections, the John and Mary Nichols Special Collections,
and the Bizzell Bible Collection

Lobby, left side



On your left as you enter the History of Science Collections, in two small cases near the door, are two 16th-century herbals, one printed in Switzerland and one in England. Both are hand-colored, likely by skilled women artists employed at the publishers' shops. Both works are open to mistletoe. Mistletoe, a symbol of love and resurrection, has long held a fascination for remaining evergreen despite having no roots in the ground. **Fuchs** was a professor of medicine at the University of Tübingen. His work contains descriptions of 500 plants, 400 of which (including Mistletoe) were native to Germany. **Gerard** was the estate manager for Queen Elizabeth I's chief executive, Lord Burleigh, and received plants from around the world. His *Herball* was the first to contain visual depictions of many New World plants, including the "Virginia Potato" (left).

Just beyond the herbals, the next case displays two 17th century books related to Santa Claus and his reindeer. In addition to reindeer, **Topsell's** natural history also includes the elephant, rhinoceros, griffin and unicorn – the then-unidentified tusk of the narwhal was interpreted in many natural history museums as the unicorn's horn (right). **Kircher's** massive work on the Earth is opened to a page that depicts the celebrated theory of Plato, who argued that a vast subterranean circulation of water is fed by two whirlpools at the poles, through which the oceans pour into the interior regions. This view persisted into the 19th century, when it was still accepted by such notable figures as Jules Verne and provided a widespread motivation for polar exploration.



Behind this case lies a model of **H.M.S. Beagle**, the ship that carried Charles Darwin around the world on the most famous voyage of discovery of the 19th century. Imagine that the case also includes a bottle of rum, for in the accompanying excerpt from his Beagle diary, Darwin laments the incapacitation of the sailors on Christmas day. Look for the sailors manning the ship. (The ones not visible are below deck in a stupor.)

Lobby, right side

Coffee-table and Hebraica

The **model** on the coffee table to the right as you enter the History of Science Collections represents the celestial spheres. Can you identify the *celestial equator* and the *ecliptic*? The celestial equator is a projection of the Earth's equator into the stars, and the ecliptic is the path the Sun follows each year as it circles around the sky. The ecliptic and equator are inclined by 23.5°. On winter solstice (December 22), the Sun reaches the southernmost extreme of its journey. Winter solstice is the day of the year with the longest night. Throughout the winter months, the Sun travels much lower in the sky during its daily westward journey across the daytime sky. In the first display case, winter solstice is labeled in a small diagram of the celestial spheres that is found on the title page of a medieval Hebrew introduction to astronomy. **Abraham bar**

Hiyya (a.k.a. Savasorda), one of the great mathematicians of medieval Europe, lived in Barcelona in the 12th century. This case also includes a depiction of a 7-branch candlestick used in the ancient Jewish temple. A 9-candle menorah is used during **Hanukkah**, the 8-day Festival of Lights celebrated in December.

Winter Skies

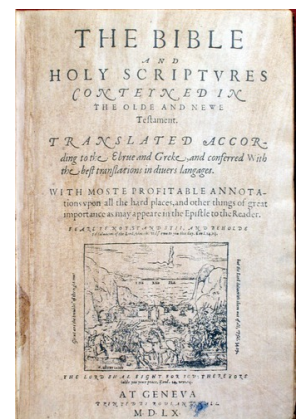


It's no wonder, despite the cold, that winter is the favorite season for many skywatchers, because winter skies include the majority of bright stars visible from the northern hemisphere. This case includes a variety of star atlases and astronomical works describing the constellations. The 1489 translation of an Arabic treatise by **Abu Ma'shar** represents the immense contribution to the sciences made by medieval Islamic civilization (also look for Arabic names of stars in the star maps on display). The large atlas of **Bode**, one of the most important early celestial atlases, presents beautiful depictions of several prominent winter constellations. Holes punched in the 19th-century **constellation cards** allow light to shine through when they are held up, for efficient learning of the constellations (modern color reprints of some of the constellation cards are displayed elsewhere). Tennyson wrote of the Pleiades, a star cluster in Taurus the Bull: "Many a night I saw the Pleiades, rising thro' the mellow shade | Glitter like a swarm of fireflies tangled in a silver braid." Taurus and Orion the Hunter (left) are 2 of the 6 prominent constellations that make up "The Winter Hexagon." How many instances of Orion and Taurus can you find in this exhibition?

The Magi and the Star

A topic of perennial interest is the Star of Bethlehem. Despite their long journey through legend and later lore, the magi were actual historical figures. Known in Babylon and other centers as the "Scribes of Enuma Anu Enlil," these astronomers developed sophisticated mathematical techniques to predict the motions of the planets and aid them in their role as advisors to the empire. The ideal of exact, quantitative, mathematical methods in science derives from the legacy of these ancient astronomers, whether found in ancient Greek, Roman, Indian or Chinese science.

A first-edition **Geneva Bible** is displayed open to the account of the magi in the gospel of Matthew. Based on the latest textual scholarship, the Geneva Bible was the first printed study Bible designed for individual lay use and, as such, represents the subversive potential of the Printing Revolution. It features a small but legible font, verse numbering, cross-references, illustrations, and book introductions. Its extensive marginal notes "upon all the hard places" conveyed Reformed theology in a way that stimulated lay debate "in every alehouse and tavern," as reported a half-century later by a dismayed King James. This was the Bible of Shakespeare, of the Puritans and the Church of Scotland, and was brought by the Pilgrims to the New World.



A Bible owned by the Griffith family, bound in Moroccan leather, features the adoration of the magi in a **fore-edge painting**. If the Bible is closed and the pages are no longer rolled as displayed here, then the fore-edge painting will disappear (stoop down to view it from below). Fore-edge paintings imply that the beauty of a book only appears to one who is reading it; an unopened book on a table shows only a gilt edge.

On October 17, 1604, **Kepler** observed a bright new star, rivaling Jupiter in brightness, in the constellation Ophiuchus the Snake Holder. In late 1603, Jupiter and Saturn completed a “triple conjunction,” a phenomenon emphasized in the astrology of Abu Ma’shar (whose 1489 book is displayed on the opposite side of the same case). The following year Jupiter and Saturn were then joined by Mars in a “planetary massing.” Kepler reasoned that the sudden appearance of the new star in proximity to the three planets, immediately after the triple conjunction and planetary massing, could not be a coincidence. It must be an astrological sign portending some epochal event such as the return of Christ. But Kepler noted that a similar triple conjunction of Jupiter and Saturn, also followed by a massing with Mars, occurred in 7-6 B.C. This event, he suggested, would have produced a new star similar to the one observed in 1604. Kepler confirmed the recent conclusion (by the chronologist Laurentius Suslyga) that the birth of Christ occurred about 5 B.C. instead of 1 A.D. With that correction to the chronology, Kepler proposed that the ancient sequence of triple conjunction, planetary massing, and new star might account for the Star of Bethlehem that attracted the attention of the magi. Many planetariums and astronomers present some version of Kepler’s theory today in seasonal talks and shows about the Star of Bethlehem.



King James Bible

2011 is the 400th anniversary of the King James Bible. In part because of his Scottish accent, James instructed scholars to produce a new translation that would set a new standard for spoken English usage, featuring carefully freighted phrases crafted for reading aloud. In verse numbering, idiom, cross-references and parallel passages, it depended heavily upon the Geneva Bible of 1560, yet it succeeded in creating a common literary culture for biblical recitation in English for three centuries. This legacy is evident in the cadence and rhythm of the story of the nativity, shown here.

The case displays two copies, the “She” issue and the “He” issue. For early printed works, when the presses were momentarily paused to correct typographical mistakes during the print run of a single edition, the copies printed before and after the pause are distinguished as different “issues.” With the King James Bible, the two issues are named for a variant passage in Ruth 3:15, where one says “*He* went into the citie” while the other correctly reads “*She* went into the citie.” The first issue, the “He” Bible, is more rare and valuable than the second. Both have been regarded as 1st editions in the past, yet because some additional pages of the “She” Bible are now known to have been printed in 1613, many bibliographic scholars now regard the “She” Bible as a 2nd edition. The “He” and “She” Bibles reveal something of the complex printing history and numerous bibliographic variations found in the King James Bible from its earliest years.

Christmas Stories

Charles **Dickens**’ *A Christmas Carol* catalyzed the celebration of Christmas as a season of merriment in the Victorian period, at a time when Christmas trees and greeting cards were just beginning to come into use. This beautifully-illustrated first edition is displayed alongside other lesser-known Christmas stories by Dickens, Washington **Irving** and Robert Louis **Stevenson**. Irving’s portrayal of Christmas in *Bracebridge Hall* and other stories inspired Dickens, and helped revive the celebration of Christmas in America.



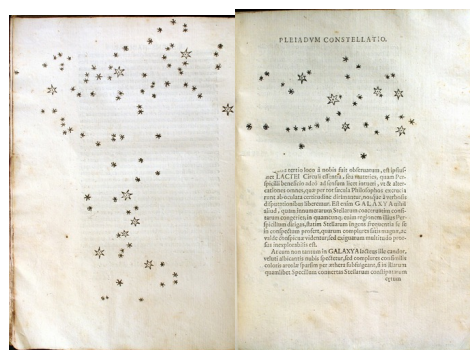
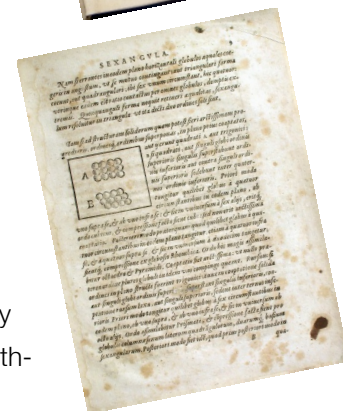
Hallway display case

Two of the 6 volumes of **Baxter's** illustrated botany of England are open to display mistletoe and holly. Holly (*Ilex Aquifolium*), described in antiquity by Pliny, has been associated with winter decorations around the world. The 17th-century herbalist Nicholas Culpepper recommended holly berries to purge the body and induce flatulence. Compare Baxter's mistletoe with the two early herbals near the entrance.

An illuminated manuscript **book of hours**, hand-written on vellum around 1400, was produced in northern France. The colors of the hand-made illustrations remain brilliant in color.

As other items on display from the Bizzell Bible Collection suggest, Bibles offer striking examples of advances in printing technology and the book arts. The **miniature Bible** contains the entire Old and New Testaments, and represents new techniques in photographic reproduction developed at the turn of the 20th century.

Kepler's *Strena*, an exploration of the geometry of the snowflake, is one of the rarest of Kepler's works. In it Kepler turned his customary mathematical prowess to the problem of crystallography. By distinguishing between growth by accretion (as in crystals) and growth by differentiation (as in living organisms), the *Strena* established a new point of departure for 17th-century investigations in mineralogy and crystallography (right).



Galileo's *Sidereus nuncius* (or *Starry Messenger*) was the first published report of astronomical observations made with the telescope. His discovery of mountains on the Moon, the four satellites of Jupiter, and numerous stars invisible to the unaided eye (as in Orion's belt and the Pleiades, shown here), made Galileo an instant celebrity. This is one of four copies of Galileo's 1st editions held by the History of Science Collections which contain his own handwriting; in this case, his signature, as he presented this copy to a friend who was a poet in the Medici court.

Public **Christmas lectures** at the Royal Institution in London began in 1825, initiated by Michael Faraday (right), who presented the lectures 19 times in an effort to broaden the educational opportunities of poor and working class families. The annual lectures have continued ever since, interrupted only during World War II, and have been broadcast on television since 1966. This year, experimental psychologist Bruce Hood will present lectures entitled "[Meet your Brain.](#)"

Note: Orion and Taurus each appear in this exhibit a total of 5 times.



For more information about this and future exhibits, visit our blog: ouhos.org