



The UNIVERSITY of
OKLAHOMA LIBRARIES
Special Collections



SOONER HORIZON

FALL 2015
VOLUME 3, NUMBER 2

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The UNIVERSITY of OKLAHOMA LIBRARIES Special Collections

The Bizzell Bible Collection

The Harry W. Bass Business History Collection

The History of Science Collections

The John and Mary Nichols Rare Books and Special Collections

The Western History Collections

The Daniel and Ruth Boorstin Collection

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COVER Johannes Hevelius, *Firmamentum Sobiescianum sive Uranographia* (Gdansk, 1690) INSIDE COVER Johann Hevelius, *Cometographia* (Gdansk, 1668)

LETTER *from the* DEAN

The opening of *Galileo's World* marks another major milestone in implementing our bold new vision for the University Libraries. As OU's intellectual crossroads, we aspire to foster and enable a sense of community, and inspire our students and faculty to create knowledge. By bridging disciplines and university departments, and embracing public engagement with this unique exhibition, we exemplify a new direction for the library as an inviting, collaborative, and innovative experience. We are extending the paradigm of the research library as a repository of collections, to a library that is an intellectual hub and service point for the entire campus. While collections and conservation will continue to be a major focus, so too will be fostering new ways of thinking, engaging and supporting creative scholarship.

We hope this exhibition intrigues you beyond the many opportunities it creates today. Let us imagine together the possibilities it animates for future library exhibitions, as well as the use of learning spaces in ways previously unexplored. Discover the multiple pathways that our rare artifacts are amplified by the digital resources and capabilities we have. I hope you will engage with us as we transform the University Libraries into an intellectual hub that is a catalyst for discussion and exploration, where collaborative engagement compliments solitary research.

The fall of 2015 will be marked by a campus-wide exhibition on a global scale, coupled with the completion of a yearlong renovation of the 5th floor special collections. Looking ahead, 2016 will see the progression of the exhibits, events, and programming to accompany *Galileo's World*, and the initiation of the next phase to expand on the success of the Helmerich Collaborative Learning Center through a renovation of Lower Level 2. Among other benefits, this phase will increase study space and open access to the Canyon Gardens. As we evolve the campus collaborations initiated by *Galileo's World*, we will expand on the services we provide to encourage and facilitate student and faculty research and support our campus community through the continued improvement to our facilities.

I hope you will join us as we celebrate *Galileo's World* and look toward the future of OU Libraries.



ABOVE Dean Luce and Dean Landers.

Sincerely,

A handwritten signature in blue ink, which appears to read "Rick Luce". The signature is fluid and cursive.

Rick Luce
Dean, University Libraries
Professor and Peggy V. Helmerich Chair
Associate Vice President for Research, Norman Campus



ABOVE The Barbara Brite Paul Grand Foyer. RIGHT PAGE Dean Luce, Barbara Brite Paul, and her husband Bill G. Paul.

Barbara Brite Paul Grand Foyer

This Grand Foyer is named in honor of Barbara Brite Paul for her generous contributions of time and resources to benefit the Bizzell Memorial Library and the University of Oklahoma. She is a wonderful example of an alumnus giving back to the university she so dearly loves and our collective appreciation is awarded to Barbara for her outstanding support.

The Barbara Brite Paul Grand Foyer could easily be a metaphor for the entire renovation. By making the space open and inviting, the new 5th floor special collection space is now representative of the treasures it displays. The renovation included repurposing more than 10,000 square feet for dedicated exhibition space, allowing visitors to interact with the special collections in new ways. Fine furnishings are complemented by numerous artifacts, including a model of the H.M.S. Beagle on loan from the Sam Noble Museum. Instruments representing the history of OU science and engineering programs occupy the wall facing the decorative screen. Additionally, the Roller Reading Room, adjacent to the lobby, now serves all four special collections on the floor.

Barbara Brite Paul was born in and grew up in Norman, Oklahoma. Her father, Cecil Brite, served as General Manager for OU's Student Publications for more than 40 years, which gives evidence to Barbara's long-time love

and passionate support of the University of Oklahoma. Barbara earned a BS in Education in 1956 and taught elementary school in Coronado, California and in Norman. She married William "Bill" G. Paul in 1963.

Barbara has served as a member of the Bizzell Library Society Board of Directors since 1987 and as president from 1988-1991. She is a life member of the OU Alumni Association, a member of the President's Associates, a long-time member of the College of Education Board of Visitors, and a distinguished alumnae of Pi Beta Phi Sorority. One of Barbara's most significant roles was taking on the responsibility for organizing many social functions and tours throughout the country during Bill's tenure as president of the American Bar Association from 1999 to 2000. Among many other honors and awards, Barbara notably received the Celebration of Education in Oklahoma Meritorious Service Award. Barbara also was one of the first major donors to the Sam Noble Museum and served many years as a member and chair of the Board of Visitors. Barbara and Bill were also recently inducted into the University of Oklahoma's prestigious Seed Sower Society.

Support from our dedicated and passionate donors makes improvements to our facilities and programming like *Galileo's World* possible.

"Bill and I have served for many years as members of the Bizzell Library Society and we have richly enjoyed our association with University Libraries. We have served alongside many friends and we are deeply committed to helping Bizzell Library adapt to the changing needs of the OU students, faculty, and staff. When we first had the opportunity to meet Dean Luce and hear about his vision and dreams, we knew it would be an exciting time as he garnered support from President Boren and other University officials to embark upon the much needed renovations and improvements. It is thrilling to see the vast changes and to know the library will attract a larger number of visitors who will be able to enjoy the incredible treasures held through our Special Collections. We are so pleased to be able make this special gift to benefit University Libraries and we are confident the excitement will be increasingly contagious."

Barbara Brite Paul



The Bizzell Memorial Library highlights its renovation with eight exhibits for *Galileo's World* on the main and 5th floors.

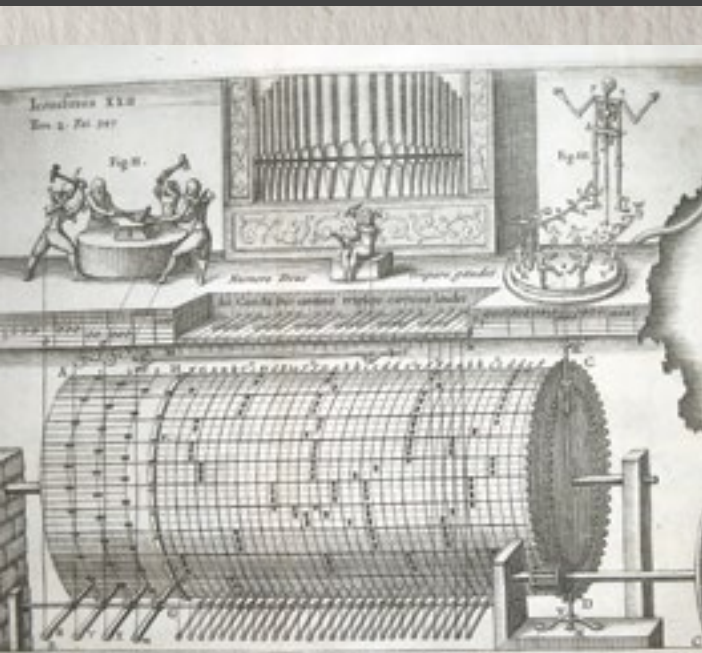
Bizzell Memorial Library

August 19, 2015 - August 30, 2016

Galileo Today & The Quest for Other Worlds

Galileo *Today* examines how the concepts pioneered by Galileo and his contemporaries have shaped our understanding of research and exploration. Fusing the old and the new, this exhibit features a one-of-a-kind model of the Leaning Tower of Pisa created by the College of Engineering. Visitors can push a button to drop two different sized balls from the top to see which lands first in an interactive recreation of the experiment attributed to Galileo. Additionally, *Galileo Today* showcases all of the supporting reading materials and digital components of the exhibition.

In a segment, *Galileo and the Quest for Other Worlds*, visitors can explore the evolution of astronomical study and science fiction in popular culture. Visitors will witness the past by examining both scientific and artistic illustrations of other worlds and more imaginative representations of spaceflight. Each exhibit showcases the everyday objects of the past such as books, magazines, and visual media. *The Quest for Other Worlds* celebrates humanity's fundamental drive to overcome great obstacles in the pursuit of knowledge. Visitors will feel connected to both the legacy of Galileo and OU's interdisciplinary spirit.



Music of the Spheres

The *Music of the Spheres* exhibit explores the connections between music and science. Music and astronomy were deeply interwoven; the study of astronomy went hand-in-hand with music, and both were part of mathematics. Since Galileo was a mathematician, astronomer and musician, *Music of the Spheres* helps us to enter into his world while at the same time it may help us begin to consider the connections between disciplines and between science and the arts that are more elusive to us today.

The first book on display is a major contribution to music theory penned by Galileo's father. Galileo grew up in a musical home and his musical training significantly impacted his later scientific experimentation. Another work on display is *The Harmony of the Universe*, by Johann Kepler. Kepler formulated the harmonic law of planetary motions in the very form of musical notation. Other original works on display illustrate the Renaissance conception of the universe in which a spherical Earth lies in the center surrounded by the regions of earth, water, air and fire. Beginning with the moon, rotating heavenly spheres nest one within the other all the way out to the stars, fixed in the patterns of the constellations. These solid spheres carry the planets and stars as they turn in place. Their harmonious motions were believed to create the music of the spheres.

Additional features include the first collected edition of Dante, the works of Chaucer and the second folio edition of Shakespeare. Galileo gave lectures on Dante. Chaucer wrote a treatise on the astrolabe. Shakespeare and Galileo shared the same birth year. Renaissance writers shared an interwoven literary and scientific heritage. These works show how medieval and Renaissance works of literature are replete with the music of the spheres and the meaning of the planets.

TOP Johann Kepler, *Harmonices mundi* (Linz, 1619) CENTER Athanasius Kircher, *Musurgia universalis* (Rome, 1650) BOTTOM Hartmann Schedel, *Liber chronicorum* (Nuremberg, 1493)

Galileo, Engineer

In the Republic of Venice, Galileo's day-to-day work as a professor of mathematics was that of a scientist-engineer. City officials and notable individuals called upon his expertise to solve civic, military and nautical problems in engineering. He addressed practical problems in light of their general significance for physics. His work as a scientist-engineer resulted in new mathematical and scientific instruments including the military compass, thermoscope and telescope.

The first section in this exhibit surveys the work of scientist-engineers in optics, architecture, metallurgy, pneumatics, hydraulics, transport, surveying, ship-building, fortification and the arts of war. Scientist-engineers were mathematicians who grasped the principles of mechanics, the use of mathematical instruments, and the operation of complex machines well enough to apply them to the complex tasks of city life.

The next section emphasizes the role of calculation and measurement in the work of any engineer. Scientists and engineers thrive upon mathematical innovations in calculation and measurement, as shown in several vignettes from the abacus to the slide rule to the analytical computer. A featured item in this case is the first female-

written computer program from the 19th century by Ada Lovelace.

The final section contains Galileo's first and rarest published book, a manual for his geometrical and engineering compass, an ancestor to the slide rule. The OU copy was the first one off the printing press, a proof copy that contains Galileo's handwriting. The Museo Galileo in Florence has provided a high quality replica of Galileo's engineering compass on display alongside the book.



TOP BACKGROUND William Schickard, *Astroscopium* (Stuttgart, 1698) ABOVE Niccolo Tartaglia, *Nova scientia* (Venice, 1558) BELOW Galileo's Compass on loan from the Museo Galileo





Galileo and China

This exhibit explores how science, then and now, plays a key role in cultural exchange. The first section of this exhibit explores the role of Jesuits in China, featuring works by Johann Schreck and Adam Schall. Schreck, a friend of Galileo's, assisted during Galileo's early telescopic observations, then helped demonstrate the telescope in Rome. Schreck was inducted into the Academy of the Lynx, an early scientific society, only a week after Galileo. A few years later, Schreck joined the Jesuits and went to China. Schreck's work on engineering, in Chinese, is on display, and may be compared with a similar work by Ramelli in the *Galileo, Engineer* exhibit.

Schreck trained the astronomer Adam Schall, who instigated a joint publishing effort between Jesuit and Chinese astronomers which continued for the rest of the century, constituting a high point of international relations between Europe and China. Portraits of Schreck and Schall are on display alongside related works. Two large maps of China, both published in the 1600's also represent the collaboration between European and Chinese mathematicians.

Asia boasts a rich history of science and technology even before the Scientific Revolution of early modern Europe, as evidenced by many European discoveries which already

TOP Confucius, *Sinarum philosophus* (Paris, 1687) MIDDLE Athanasius Kircher, *Chine... Illustrée de Plusieurs Monuments* (Amsterdam, 1670) BOTTOM Johann Schreck, *Ensei kiki zusetsu rokusai* (Japan, 1830)

existed in Asia. For example, Francis Bacon championed the new era by pointing to three supreme novelties: printing, gunpowder and the magnet. The richness of Asian science is evident in the irony that each of these modern European discoveries came to Europe from Asia, unbeknownst to Bacon.





Controversy over the Comets

TOP LEFT Curator of the History of Science Collections and of *Galileo's World*, Dr. Kerry Magruder discusses works on display in the *Controversy Over the Comets* exhibit. **TOP RIGHT** OU freshmen Madeline Phillip (right) and Kelsey Hassig (left) explore an astronomical instrument. Image credit: Daniel Hoang, *OU Daily*

This exhibit examines one of the lesser-known aspects of Galileo's career, a decade long controversy over three comets that appeared in 1618. The controversy was the occasion for Galileo's famous assertion that mathematics is the language of nature. Two different copies of the first edition of *The Assayer* (1623), the book in which he made this claim, are on display. Galileo's claim about mathematics as the language of nature occurred in the midst of controversies with fellow mathematicians. In the controversy over the comets of 1618, mathematical methods alone proved unable to resolve the enigmas they faced.

The first section of this exhibit features the work of Tycho Brahe, the leading observational astronomer of the 16th century. After Copernicus, astronomers experimented with geometrically equivalent cosmic systems, debating diverse systems of the world. Given that several competing systems produced identical planetary predictions, astronomers searched for other kinds of observations that might decide between them.

Tycho showed that comets seemed to cross through multiple spheres, and that the spheres of Mars and the sun seemed to intersect. While the Copernican system predicted "stellar parallax," meaning that stars should appear to slightly shift in position, but which was not observed. The evidence remained inconclusive, yet for most astronomers, it seemed to point in favor of Tycho's system rather than that of Copernicus.

The second section of the exhibit looks more closely at comets. Since antiquity, comets posed an enigma. They appear without warning. They do not stay within the Zodiac like the planets. They come from different directions and their speed and brightness change radically. Their tails always point away from the sun. Parallax was observed for the moon but not for comets. This implied that comets are farther away than the moon, contrary to Aristotle's argument that comets are fiery vapors in the upper atmosphere.

Books by Galileo and Oratio Grassi are featured in the third section of this exhibit. Grassi was the leading astronomer in Rome when the three comets of 1618 appeared. Displayed side by side with works by Grassi, this section showcases two works of Galileo that betray the controversial occasion of their publication. While both were published under someone else's name, the manuscript for one still exists in Galileo's hand, while the second was a trial publication of material that Galileo incorporated almost entirely the following year in his book, *The Assayer*. These rare publications by Galileo and Grassi have not yet received the full scholarly attention they deserve.

While mathematicians resisted the attempts of physicists and theologians to discount their conclusions, even mathematical methods alone were not able to resolve the enigmas of comets and diverse systems of the world. Galileo argued against Grassi and the system of Tycho Brahe that went beyond the evidence available at the time.



A New Physics

TOP Sacrobosco, *De sphaera* (Wittenberg, 1545) BOTTOM Archimedes, *Quae supersunt omnia* (Oxford, 1792)

In 1638, Galileo published his masterwork of physics, *Discourse on Two New Sciences*. The first edition of this work is on display at the Sam Noble Museum; two later editions are on display as the centerpiece of this exhibit. The two new sciences Galileo described are tensile strength and mechanics. The first section of this exhibit focuses upon machines in motion, the study of mechanics. Books displayed in this section are the more theoretical counterparts of those encountered in the *Galileo, Engineer* exhibit.

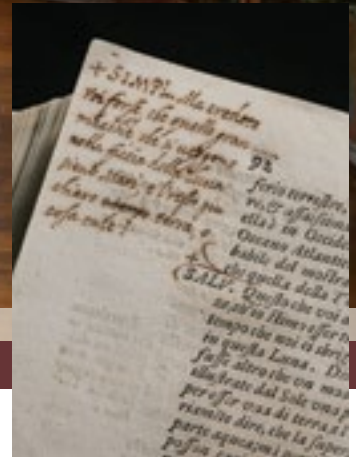
When approaching this exhibit, all eyes will be drawn to a working model of Galileo's inclined plane, reconstructed on the basis of his account in *Two New Sciences*. This massive object, constructed by craftsman Ron Mitchell, is actually a precision scientific instrument. Visiting classes will be able to replicate Galileo's experiment by rolling a ball down the inclined plane.

This exhibit is thematically linked with the preceding and following exhibits: *The Controversy over the Comets* exhibit shows that Galileo championed mathematical methods in science, *A New Physics* and *The Galileo Affair* explore how physicists and theologians in turn each underestimated the power of new mathematical methods in physics and theology. Galileo challenged the established discipline of natural philosophy, or physics, which relied upon non-mathematical methods.

Physicists in Galileo's day were not trained in mathematics, any more than theologians. Practitioners of physics regarded mathematics as unable to reach true conclusions about the physical world. Yet instead of basing physics on logic and qualitative principles, Galileo exemplified a new experimental and mathematical approach to physics.

The second section of this exhibit explores how, with Newton's mathematical physics the following generation, the mathematical approach would transform understanding not only of motion but also of the universe itself.





TOP The Gaylord Room that houses the Bizzell Bible Collection. ABOVE LEFT Thomas Aquinas, *Summa theologiae* (Nuremberg, 1496) ABOVE RIGHT Galileo, *Dialogo sopra i Due Massimi Sistemi del Mondo* (Florence, 1632)

The Galileo Affair

The beautiful Gaylord Room, renovated in the style of the Bizzell family home, showcases the Bizzell Bible Collection. Six hundred and sixty Bibles and bible-related volumes line the shelves on two walls, along with family memorabilia. Interspersed among the volumes are works related to the controversy over the Bible and the new science of Galileo.

Sometimes in harmony, sometimes in conflict, science and religion interact in diverse and historically contingent ways. *The Galileo Affair* turns out to be more complicated than a simple conflict of science and religion. It stands as a paradigmatic example of a controversy where novel methodologies challenge established disciplines within an authoritarian social and political context. In a tumultuous time, Galileo challenged the established and reputable domains of physics and theology, both of which underestimated the knowledge claims of the new mathematical science.

The first section on the Bible and science displays works showing how the religious and political conflicts of the Reformation and Counter-Reformation evoked passionate and widespread controversies over the meaning of the Bible. Both Catholic and Protestant traditions accepted, in principle, the idea that Scripture passages are accommodated to ordinary human understanding

and cannot be taken literally. Practical application of this principle, however, was complicated by longstanding traditions of interpretation. Natural philosophers might face mortal hazards when writing about theological topics. Yet in other cases scriptural passages also prompted, motivated, shaped and helped legitimize scientific inquiry. Featured items of this section include a first edition King James Bible, the first defense of Copernicus in Spain which appeared in a commentary on the biblical book of Job, as well as a study of biblical prophecy by Isaac Newton.

The second section on Galileo's encounters with the Inquisition and his subsequent trial, includes the first printed edition of his *Letter to the Grand Duchess Christina*. In this work, Galileo argued that the purpose of Scripture is to tell us how to go to heaven, not how the heavens go; Scripture never errs, but its interpreters do err; and read rightly, Scripture and science will never conflict (there is a unity of truth). That which is obscure (figurative language) should be explained by that which is clear (mathematical demonstrations). Nevertheless, Galileo's *Dialogue on the Two Chief Systems of the World* overstepped the expected boundaries for a mathematician by arguing that Copernicanism was physically true and certain rather than merely hypothetical, and Galileo was called to trial in 1633. OU's copy of the *Dialogue*, on display, contains Galileo's own handwriting.



Headington Hall

A small display in the Headington Hall athletic dormitory features six rare works illustrating the connections between the world of Galileo and sports science, sports medicine and athletics.

The science of Galileo's time period had much to do with health and physical activity. This exhibit includes an early edition of Galileo's work on tensile strength, motion and the law of falling bodies. The physics of sports connects health science to the world of athletics. Galileo could have given excellent advice on improving agility and throwing and catching balls with precision.

Items on display include a 2nd edition of Andreas Vesalius' anatomical work. Special events at Headington Hall will include a 3D virtual reality station utilizing Oculus Rift goggles for visitors to view the depictions of musculature which, when set side-by-side, perfectly align to form a 360-degree panorama. Other works explore the sports of ancient Olympiads (Mercuriale, 1577); the physics of bones and muscles (Borelli, 1685); and the advantages of exercise training and physical therapy in promoting health (Pugh, 1794). *Galileo's Discourse on Two New Sciences*, his masterwork on the physics of falling bodies and projectile motion, is on display in the first edition of his collected works (1656). Finally, a manual of court etiquette from Galileo's era offers advice relevant to athletes today.

For the past three years in a row, OU Athletics has contributed funding for acquisitions to the History of Science collections. In 2014, the Athletics Department assisted in the acquisitions of the book by Galileo's father, a prominent music theorist, which opens the *Music of the Spheres* exhibit in the Bizzell Memorial Library. In 2013, Athletics funding helped acquire a beautiful work on perspective drawing by Lorenzo Sirigatti, which Galileo studied, that will be on display at the Fred Jones Jr. Museum of Art in the spring. In 2012, the Athletics Department provided support for acquiring a handwritten manuscript of lectures by the leading astronomer in Rome during Galileo's telescopic discoveries, never before published and new to scholars, which is on display in the *Controversy over the Comets* exhibit in Bizzell. The *Galileo's World* exhibition is a way of saying thank you by showcasing rare treasures in this campus-wide exhibition.

HEADINGTON HALL

Galileo and Sports

October 15, 2015 - April 15, 2016

Opening Reception

October 23, 2015 6:30 - 8 PM



TOP & ABOVE Andreas Vesalius, *De humani corporis fabrica* (Basel, 1543)



Sam Noble Museum

TOP LEFT Leonhart Fuchs, *De historia stirpium* (Basel, 1542) TOP RIGHT The exhibit at the Sam Noble Museum BOTTOM LEFT John Gerard, *The Herbal* (London, 1597)

In the sixteenth century the Spanish physician Francisco Hernandez recorded copious information about Native American plant and animal knowledge. The Academy of the Lynx, the scientific society of which Galileo was a member, published a monumental natural history of the Americas based on Hernandez' manuscript a generation later. Through this work, Native American knowledge of plants and animals became part of mainstream European biology. This exhibit explores the contributions of the Native Americans to European natural history during Galileo's time, as well as the relationship between art and science in the creative documentation of plants and animals.

An Italian nobleman, Federigo Cesi, founded the Academy of the Lynx (*Accademia dei Lincei*), one of the earliest scientific societies. Publishing a definitive edition of Hernandez' manuscript comprised the central, albeit elusive, goal of Cesi and the Academy of the Lynx. Galileo joined the ranks of the Lynx in 1611, bringing wide-ranging expertise in mathematics, engineering, literature, art and medicine. They worked together to publish a monumental natural history of the Americas based upon the manuscript Hernandez prepared for the king of Spain. The landmark project, finally accomplished in 1651, more than 70 years after Hernandez' sojourn in central Mexico, symbolizes the transformation of natural history into a global endeavor.

The Lynx edition of Hernandez is on display alongside specimens from the Robert Bebb Herbarium of the OU Department of Biology. Three Galileo first editions are on display, including the Galileo's masterwork in physics, the *Discourse on Two New Sciences* (1636), which provided a scientific constraint for assessing reports of strange creatures. This Galileo first edition is included alongside a little-known work of literary criticism by Galileo, *Considerations on Tasso* (first published in 1793). The third Galileo first edition is a pamphlet of letters to Cesi about the Academy of the Lynx. Other original books on display include the first published edition of Aristotle's biological works (1476), the natural histories of Aldrovandi and Topsell, early hand-colored printed herbals of Fuchs and Gerard, and other works in natural history by members of the Academy of the Lynx.

SAM NOBLE MUSEUM
Through the Eyes of the Lynx: Galileo, Natural History and the Americas

August 1, 2015 - January 18, 2016



National Weather Center

Oklahomans and Aerospace August 1, 2015 - August 30, 2016

Just as the study of astronomy and scientific experimentation led to the eventual development of aerospace engineering, Oklahoma is fundamentally linked to this industry as well. Bill Moore, author of *Oklahomans and Space* and curator of the exhibit, illustrates Oklahomans' contributions to the aerospace industry in the 20th century.

Copernicus and Meteorology September 25, 2015 - August 30, 2016

From antiquity to the present, meteorology has always been a meeting place of many disciplines. Astronomy, optics, chemistry and the geosciences are just a few of the disciplines that were pursued in close association with meteorology. Throughout history, meteorologists have adopted innovative methodologies to address emerging research problems that require multidisciplinary expertise.

In 1543, with the publication of *On the Revolutions of the Heavenly Spheres*, Nicolaus Copernicus placed the Sun at the center of the universe and set the Earth in continual revolution around it. The book attracted widespread debate. The edition here on display was published just after the work was placed on the *Index of Prohibited Books* in 1616. Other featured items include the first defense of Copernicus in England, published in a meteorological work by Thomas Digges; a 16th-century astronomical manuscript discussing a topic from *Aristotle's Meteorology*; the ground-breaking *Meteorology* of Descartes; and John Finley's 19th-century study, *Tornadoes*.

TOP Athanasius Kircher, *Mundus subterraneus* (Amsterdam, 1665)

BOTTOM LEFT Accademia del Cimento BOTTOM RIGHT René Descartes, *Les Météores*, in *Discours de la Methode* (Leiden, 1637)

Galileo and Experimentation September 25, 2015 - August 30, 2016

Galileo's empirical investigations and innovative scientific instruments opened up new worlds of discovery. His thermoscope, the ancestor to the thermometer, facilitated quantitative comparison of temperatures throughout the year and under varying circumstances. When Ferdinand II de Medici founded the Academy of Experiment (Accademia del Cimento) in Florence, experiments with the thermometer, barometer and air pump led to advances in meteorology, physics, chemistry and cosmology. Featured items in this exhibit include a replica of Galileo's thermoscope provided by the Museo Galileo in Florence, the first edition of Galileo's treatise on floating bodies, and reports of the Academy of Experiment displayed alongside a selection of modern instrument counterparts representing the world of meteorological experimentation at OU today.



OU-Tulsa Schusterman Library

The Scientific Revolution
August 24, 2015 - December 18, 2015

Changing ideas about the natural world in the 16th and 17th centuries have come to be known as the “Scientific Revolution.” Although historians sharply contest how truly revolutionary these centuries actually were, all those involved in scientific discussions were trying to determine the proper way in which nature might be known. Galileo emphasized mathematics as the language of nature. Tycho Brahe tried to integrate astronomy with medicine and chemistry, as reflected in his motto, “Looking up, I look down.” This exhibit samples the vast range of disciplines that *Galileo’s World* encompasses, tying together the old with the new by highlighting the cross-disciplinary approaches and interconnectivity of research in a fully digital exhibition.

OU-HSC Robert M. Bird Library

Galileo and the Health Sciences
August 6, 2015 - April 15, 2016

This exhibit explores the combination of medicine, art, engineering and physics in Galileo’s world. Galileo himself was trained as a physician. He had an immense influence upon the health sciences of his time in the development of instruments such as the thermometer and in the use of quantitative research methods. Many of Galileo’s friends and associates throughout his life were physicians, artists and engineers. The use of artistic illustrations in the service of anatomy remains one of the most striking developments of the health sciences during Galileo’s time. Features on display include 14 anatomical works and a replica of Galileo’s thermoscope provided by the Museo Galileo.



OPENING RECEPTIONS

National Weather Center
September 25, 2015

Forum: 1-5 PM , Reception 5-7 PM

Robert M. Bird Health Sciences Library
September 17, 2015

4:00 PM to 6:00 PM

Schusterman Library
September 26, 2015

4:00 PM to 6:00 PM



TOP Tycho Brahe and Elias Morsing, *Diarium astrologicum* (Uranib, 1586) BOTTOM Mondino dei Luzzi, *Anatomia* (Marburg, 1541), ed. Johann Dryander

Conservation Lab

During the past several months, multiple projects have been briskly churning like cogs on a giant mechanical orrery, all turning toward one singular endeavor, *Galileo's World*.

One of the more intricate projects was the assessment of every volume that will be on display during the exhibition. As conservator, my task was to analyze the condition and stability of each of these incredible treasures. Every volume, from Darwin's *On the Origins of Species* to Galileo's signed copy of *Sidereus Nuncius* passed through my hands and fell under the scrutiny of my critical eye.

It has been said that some books have a life all their own. These books certainly told tales far beyond the ink on their pages. Each binding was analyzed to determine the age and origin. Many books had been rebound time and time again. Others bore the scars of a long and useful life. Even more had been the victims of disastrous events and pivotal periods in the history of humanity. There were books that

had forged leaves that, prior to assessment, had gone undetected. Other books exhibited the scars of censorship. One book was singed in the Great Fire of London in 1666. I assessed books that were bound using the scraps of manuscripts that were discarded during the dissolution of the monasteries of mid-16th century England. Books with illustrious provenance and inscriptions to esteemed scientists, artists, and great thinkers all found their way into my hands, and more importantly will now have the opportunity to be seen by an audience like never before both through their physical display, and through the careful digitization that will allow visitors to see these works up close, page by page — notations, scars and markings included. The digitization of these works will provide perpetual documentation of each work as an artifact in whole.

Sean Richards
Director of Conservation



LEFT Preparing materials for *Galileo's World* TOP RIGHT Pierre D'Ailly, *Meteororum* (Leipzig, 1506) BOTTOM RIGHT Grassi



Digitization Lab

In the final months before the opening of *Galileo's World*, the University Libraries Digitization Lab came to work quite closely with the Libraries' repository developers — the software developers who designed and created the digital repository, an online, publicly accessible location for the digital images created in the Digitization Lab. As they built the repository, we communicated constantly to address a thousand details and to enable a smooth flow of digital images into the repository with the end goal of enabling visitors to the *Galileo's World* website to view each work on display virtually, in completion, as well as physically.

Rare books offer opportunities for scholarly research into the differences among specific books, particular publishing houses, individual print runs, and much more. Access to unique rare books once required making arrangements to examine them in person with rigid rules to ensure the conservation of the artifact, but the advent of high-quality digitization and online digital repositories have enabled new opportunities for scholarly research.

By digitizing the works of the special collections for *Galileo's World* and the creation of the repository, we have created a tremendous opportunity for the advancement of research. Once a scholar finds a work from *Galileo's World* in the repository, they have ready access to the complete

set of very high-resolution images of that book created by the Digitization Lab. The quality is such that the digital images can be resized to see extremely fine details such as fibers in the handmade paper and variations in hand-set type; small details in hand coloring or woodcuts; sewing, leather tooling, and other clues to the construction of a book in addition to all of the idiosyncrasies. All of this information is associated, in the digital repository, with information on the publisher and the date and location of publication. In addition, during digitization each book's pages were tagged if they had handwriting, illustrations, or foldouts — another aspect scholars will be able to discover easily as they explore the digital images in the repository.

This is a boon to scholars, as the ability to easily find and examine such details creates new opportunities for understanding and knowledge. Whether their research interests touch on binding styles, printing methods, printers and the print industry, the transmission of texts, changes to a text during a print run, annotations by subsequent owners, or something else entirely, scholars will find opportunities for deep exploration in OU's books from the world of Galileo.

Barbara Laufersweiler
Digitization Lab Coordinator

LEFT Student employees Heather Eck and Diana Trejo prepare to digitize a book with a high-resolution digital camera and macro lens in the University Libraries Digitization Lab. **TOP RIGHT** Student employee Matt Ware checks the digital images of a book being photographed on a portable copy stand. **BOTTOM RIGHT** A student employee turns to the next page of a book being digitally photographed in the University Libraries Digitization Lab.

Recent Acquisitions: The OU Libraries NavApp

OU Libraries has released a new mobile application, the OU Libraries NavApp. The NavApp will give visitors turn-by-turn directions through the library to collections and services, as well as the exhibits, while providing a host of supplementary materials such as videos, embedded web content and more.

Early last year, OU Libraries began exploring a new suite of mobile technology that uses low power Bluetooth beacons to position smartphone users in large indoor environments. As a result of that experimentation, a proof of concept deployment was engineered during the Spring 2015 semester in Bizzell Memorial Library's new Helmerich Collaborative Learning Center.

Beyond functioning as an innovative training tool for the new student staff in the HCLC, the trial period for this "Indoor GPS" technology allowed us to create firm links between OU Libraries' vast digital resources and our diverse physical services.

With the NavApp everything from how-to videos to 3D models and tutorial documentation can be tied to a

physical location. This ensures a uniformly navigable online and offline (that is, physical) library experience.

NavApp users will have further access to a range of features such as:

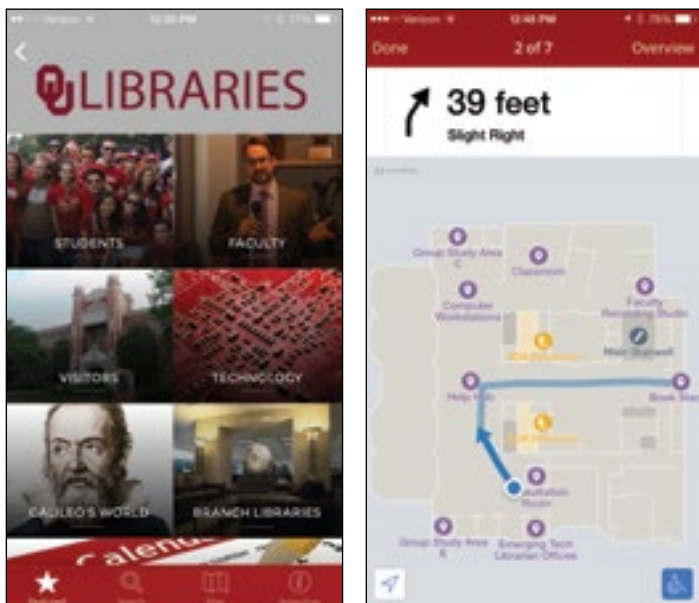
- One-click contact with service desks, branch libraries and special collections
- Technology how-to guides and tutorials
- Turn-by-turn directions to services and resources in Bizzell Memorial Library
- Integration with libraries.ou.edu
- Enhanced content to featured exhibitions in Bizzell and around campus

Importantly, key aspects of several *Galileo's World* partner locations will be prominently featured in the OU Libraries NavApp. During the initial public rollout of the app during the Fall 2015 semester, directions to (and throughout) exhibitions at the National Weather Center and the Sam Noble Museum will be available to app users. In the spring of 2016, that functionality will include the Fred Jones Jr. Art Museum and their *Galileo's World* related resources.

Early on in the development process, our team established an overriding goal that we hoped to achieve with this technology: simplify an extraordinarily complex and sometimes intimidating facility so that undergraduates won't delay their first visit to OU Libraries. *Galileo's World* — in conjunction with its partner sites and along with the Libraries' new website — has greatly increased the value of the NavApp and, in effect, the feasibility of that goal.

Download the OU Libraries NavApp in the Google and Apple app stores now.

Matt Cook
Emerging Technologies Librarian



ROI: A Digital Infrastructure

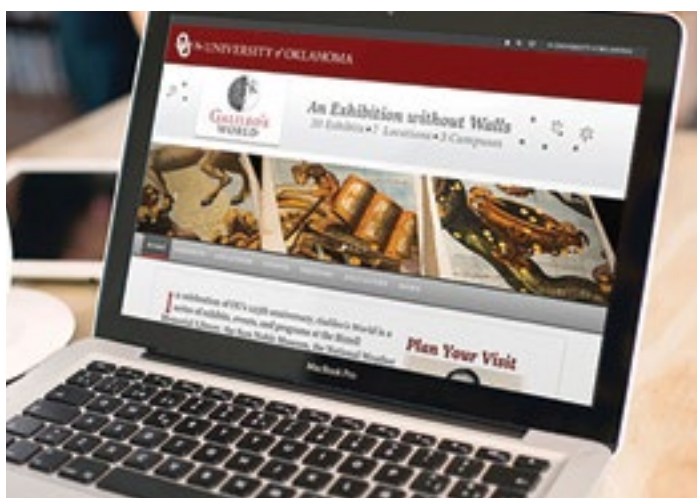
Many significant enhancements have been made to the libraries' digital infrastructure, providing the public with unprecedented access to the libraries' most prestigious materials usually locked safely away in the vaults of the libraries' special collections. The newly launched *Galileo's World* website allows visitors to flip leisurely through the pages of first edition works by Galileo, zoom in to see Galileo's handwritten notes within the margins, or share beautiful illustrations through the power of social media. This permanent virtual exhibition can be used by scholars throughout the world to advance their understanding of the history of science and its application to modern research at OU today. Tools built into the site will allow educators to build lesson plans, students to build lists of their favorite items, or visitors to

build a printable itinerary for their campus visit. Never before have the treasures within the libraries' special collections been able to impact the imaginations of people worldwide to such an extent.

The investment in the libraries' digital infrastructure can be seen not only in the establishment of such an ambitious exhibition, but also in the launch of the libraries' new main website. The new site is designed to meet the needs of modern scholars that conduct research in a constantly changing, mobile environment. Whether the visitor is an undergraduate using a cell phone while walking between classes or a professor doing research on a laptop at the libraries' Bookmark Cafe, the site flows and responds to each new mobile device. The new aesthetic look of the site invigorates the libraries' online presence with a fresh, modern feel. Visitors can build a personalized list of resources they use frequently, chat with a librarian online, or find articles from other libraries across the world.

The enhancements to the libraries' digital presence help further our central role as a hub of scholarly research and as a catalyst for collaborative engagement within our community. We are moving beyond merely offering a set of tools online, to offering platforms that are in synergistic alignment with the way our community now learns and conducts research.

Twila Camp
Library Web Services Manager



ABOVE The *Galileo's World* website, available at galileo.ou.edu BELOW Future Sooners enjoying the *Galileo's World* theater video during the Bizzell Memorial Library open house.



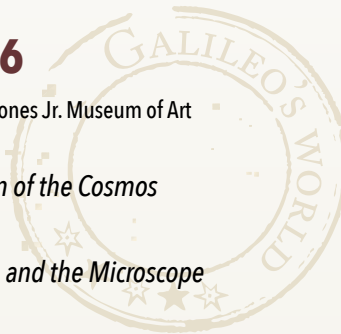


Johann Hevelius, *Cometographia* (Gdansk, 1668)

COMING IN 2016

Sam Noble Museum | National Weather Center | Fred Jones Jr. Museum of Art

- | | |
|-------------|---|
| Jan.
21 | <i>Galileo's World: An Artful Observation of the Cosmos</i>
Fred Jones Jr. Museum of Art |
| Feb.
6 | <i>Through the Eyes of the Lynx: Galileo and the Microscope</i>
Sam Noble Museum |
| Feb.
25 | <i>Symposium</i>
Sam Noble Museum |
| Apr.
15 | <i>Visiting Author, Dava Sobel</i> |
| Aug.
28 | <i>Stadium Under the Stars</i> |
| Sept.
10 | <i>Galileo's Torch</i> |



Events are subject to change. Please visit galileo.ou.edu for more information.

For additional information, please contact:
University of Oklahoma Libraries
401 W. Brooks St. | Norman, OK 73019-6030
405-325-2611
<http://libraries.ou.edu>

