

The Ursa Minor Report



Newsletter of the Kutztown University
Planetarium & Observatory

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Spring 2018

Celebrating 50 Years!



Following the construction of the Grim-Knedler Science Building in 1967, the planetarium and astronomical observatory were completed. The very first planetarium show on campus was a special presentation of “Star of Bethlehem” on December 17, 1967. The spring of 1968 was therefore the first academic semester with the planetarium in use. The telescope was installed later, with the collimation, alignment, and first light occurring in early June of 1968. Because of these anniversaries, we are celebrating 50 years of the planetarium and observatory during this Spring 2018 semester!

Pictured above is the original Grim-Knedler Science Hall as it looked 50 years ago. Notice how the landscape has changed since then. Pictured to the right, also nearly 50 years ago, are Dr. Ahmad Kiasat and Dr. Carlson Chambliss (left to right) with the original astronomical telescope at Kutztown.

This issue of *The Ursa Minor Report* celebrates our 50th anniversary with a very brief history of the KU Planetarium and Observatory. We also present the Spring 2018 schedule of public events.

We're sharing this milestone with some other events of 50 years ago (in science, science fiction, and popular culture), and we're incorporating them into our celebration. Humanity's first manned trip to the moon, Apollo 8, happened 50 years ago, along with the invention of the multi-wire proportional chamber which made it possible for the European Organization for Nuclear Research (CERN) to detect subatomic particles. The first pulsar (highly magnetized neutron star) was discovered 50 years ago, too. We'll be discussing these topics at the educational planetarium shows, which are all new this semester!

In sci-fi, we're celebrating the 50th year of the epic film *2001: A Space Odyssey*. We'll also be hosting a live *Space Invaders* (vintage Atari video game) competition in the planetarium. The rock band Led Zeppelin turns 50 this year, too, and so does The Beatles' *White Album*, so we'll have special LASER light shows to celebrate them.



A Brief History of the KU Planetarium & Observatory

by Phill Reed

Kutztown State College Adds Astrophysicist to Its Staff

Native of Iran
Named to School's
Astronomy Post

The future of Kutztown State College's educational program in astronomy has been placed in the hands of a young native of Iran as work proceeds on the construction of a planetarium on the campus.

Appointed assistant professor of astronomy was Dr. Ahmad Kiasat, who directed this year's summer Astronomy Institute at Fairfax, Va. He is the first trained astrophysicist on the KSC faculty.

In addition to teaching, Dr. Kiasat will be in charge of implementing the planetarium and observatory being built as a wing of the space-age science building.

The importance of Dr. Kiasat's role is emphasized by the



DR. AHMAD KIASAT

(Above) A clipping from *The Reading Eagle* on August 7, 1966. (Below) The cover of the August, 1971 issue of *Sky & Telescope* and an excerpt from the article about Kutztown's observatory-planetarium. Complete copies of the original articles are available at the KU Planetarium.

"Kutztown State College Adds Astrophysicist to Its Staff" is a headline in the Aug. 7, 1966 issue of *The Reading Eagle*. Dr. Ahmad Kiasat was hired to lead the college's secondary education program in astronomy. He oversaw the construction of the planetarium and observatory in the new wing of the "space-age science building" now known as Grim Hall. The planetarium, featuring a top-of-the-line Spitz A-3-P prime-sky projector, became an active part of the science education program in January, 1968. The astronomical observatory's 46-cm modified Cassegrain optical telescope, manufactured by Tinsley Instruments, was installed in June, 1968.

Kiasat eventually returned to his native country of Iran, but not before hiring Kutztown's second astronomer, Dr. Carlson Chambliss, in 1970. Together, Kiasat and Chambliss wrote an article featured in the August, 1971 issue of the popular magazine *Sky & Telescope* detailing the new Observatory-Planetarium at Kutztown, Pennsylvania.

Kutztown's third astronomer, John Loomis, was hired in 1974 and served as an astronomy professor and the Planetarium Director for the next 31 years. Chambliss and Loomis remained the two tenured astronomy professors at KU until their retirements in 2003 and 2005, respectively. Both astronomers were very active during their time at KU. Loomis presented thousands of planetarium shows on campus, inspiring an uncountable number of school students and community members. Chambliss authored more than 50 astronomy research papers on eclipsing binary stars and variable stars, the observations for many of which were performed on campus with the Tinsley telescope.

Sky and TELESCOPE

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- ★ AUGUST, 1971
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The Gum Nebula
The Bosscha Observatory in Indonesia
Some Plans for Apollo 15

Solar Prominences and Their Magnetic Fields—1
Observatory-Planetarium at Kutztown, Pennsylvania

Boscha's Twin 23.6-inch Refractor



The Gruber-Knedler Planetarium and Observatory has the star theater on the first floor, requiring considerable height (shaded section), and the telescope dome on top. This and the other circular wing of the Grim Science Hall are connected by the lobby seen partially at lower right.

monwealth of Pennsylvania. The larger wing is designed around a Foucault pendulum, which is in perpetual operation. In addition to having classrooms and laboratories for the physical sciences, including geology and geography, this wing contains a seismic observatory and an optics laboratory. Some students and faculty members make telescope mirrors, using a Foucault device and test tunnel. The planetarium has a 34-foot perforated aluminum dome and a Spitz A-3-PR prime-sky projector. The mercury-xenon light source projects 2,600 star images down to visual magnitude 5.2, with a few fainter ones to fill out some constellations and clusters. As in many other planetariums, we project slides onto the dome from the central pedestal on which the projector stands, as well as from a dozen cubic boxes installed at equal intervals around the room beneath the light covering. These and our special effects devices can all be remotely controlled from the lecturer's console.

Observatory-Planetarium at Kutztown, Pennsylvania

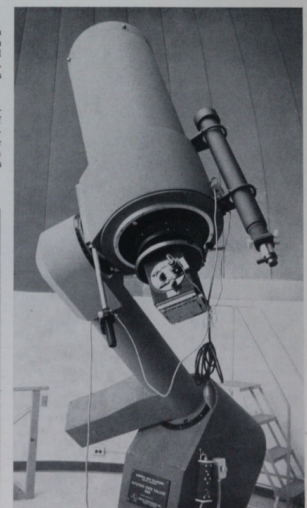
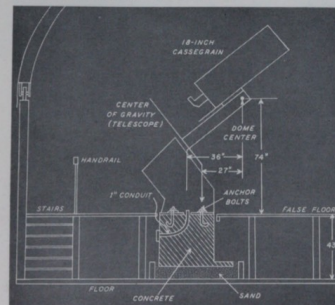
AHMAD KIASAT and CARLSON R. CHAMBLISS, Kutztown State College

AT THE Kutztown State College in southeastern Pennsylvania, the astronomy program has grown from virtual nonexistence prior to 1966 to its present six astronomy and space-related courses. The introductory course enrollment is now 150, and a third of the lectures are given in our 103-seat planetarium. We have an 18-inch Tinsley Cassegrain telescope, equipped for photography, photometry, double star observations, and solar studies by image projection.

The Gruber-Knedler Planetarium and Observatory are situated in the smaller wing of Grim Science Hall, which was financed at about \$1,500,000 by the Com-

Right: The 18-inch Tinsley reflector with its plateholder attached at the Cassegrain focus. The finder telescope has a 3-inch objective.

Below: The cross section of the interior of the Kutztown State College Observatory. The false floor is 20 feet in diameter. Illustrations are from the authors.



76 SKY AND TELESCOPE, August, 1971

From an educational perspective, Chambliss and Loomis used the planetarium and observatory primarily to train future high school teachers and planetarium directors through Kutztown's Secondary Education Earth and Space Science program. The program produced many successful professional astronomy educators, a few of whom will be mentioned here. Gary Becker ('72) made his career as the Director of the planetarium at Dieruff High School in Allentown and continues after retirement as an adjunct astronomy professor at Moravian College in Bethlehem. Becker is an award winning teacher and astrophotographer, and he returned to KU to teach astronomy labs in 1981 and 1982 as a part-time sabbatical replacement. Peter Detterline ('81) worked as an astronomy teacher and the Director of the Boyertown School District's planetarium for 36 years until his retirement in 2017. He is still teaching astronomy as an adjunct professor at Montgomery County Community College. For 15 years (1998 – 2013) Detterline also taught part-time at KU, covering Introductory Astronomy in the evenings and contributing to the observatory and planetarium. Detterline is a very active observational astronomer, having held several additional professional posts and published numerous articles. Another graduate of the Earth and Space Science education program was James Bruton ('83). Bruton, now a high school teacher and observational astronomer in California, is mentioned here because he discovered an asteroid (#23707) in 1997 at Chinle Observatory in Arizona. The asteroid was given the official name of *Asteroid Chambliss* by the International Astronomical Union (IAU) in 2017, in honor of Bruton's college professor – KU's Dr. Carlson Chambliss.

Both long-time astronomers at KU remain active. Loomis continues to teach astronomy as a part-time adjunct professor at nearby Lehigh University. Loomis is also still consulted on occasion about the Kutztown observatory and planetarium because it was his technical skills and upkeep of the facilities that enabled them to operate for 50 years. Chambliss is still active in the American Astronomical Society (AAS) and the IAU, but he has also been pursuing his passion for numismatics and collecting coins, paper money, and stamps. He has authored numerous articles and books on these subjects, and he has used them to establish several philanthropic undertakings. These include the Chambliss Student Academic Achievement Awards and the Chambliss Faculty Research Award, both at KU. Chambliss also established national awards with the AAS, which include the Chambliss Astronomy Achievement Student Awards, the Chambliss Astronomical Writing Award, and the Chambliss Amateur Achievement Award.

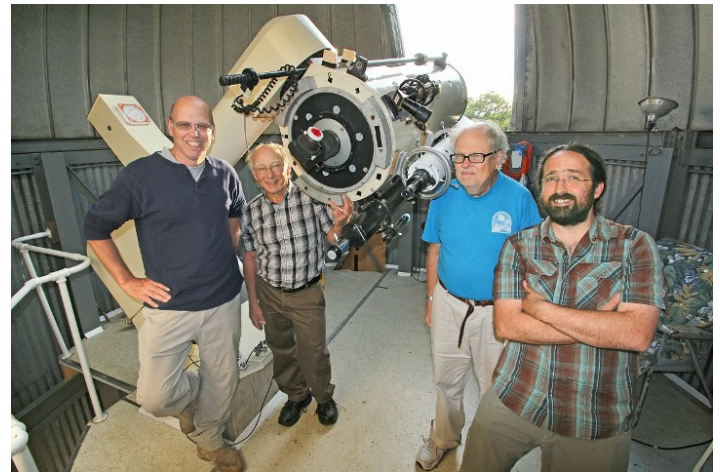
For several years after the retirements of Chambliss and Loomis, the planetarium and observatory were managed by a series of temporary, adjunct astronomy faculty members. These include Dr. Judith Parker, now an adjunct lecturer in the Physics Department at Muhlenberg College, and Dr. Robert Smith, now retired after serving another six years as an Assistant Professor of Physics here at KU, in addition to Detterline and others.

Kutztown University hired its next two permanent astronomers in 2009; Dr. Phill Reed (astrophysics) and Dr. Erin Kraal (planetary geology). Reed and Kraal are now both tenured at KU and represent the future of the astronomy program. Under Reed and Kraal, KU's astronomy program added an Astronomy track within the B.S. Physics major and an Astronomy minor that is open to all students on campus, while continuing to support the Earth and Space Science secondary education program. Reed has also been serving as the Director of the KU Planetarium and Observatory since 2008, and it was under his guidance that both facilities received major upgrades in recent years.

The antiquated Spitz A-3-P planetarium system was replaced with a modern full-dome digital projection system in 2010, and a full-color LASER projector was added in 2015. In 2012, the original 46-cm Tinsley Instruments telescope was replaced with a



A Kutztown State College postcard from the early 1970s features a photograph of the original Spitz A-3-P prime-sky planetarium projection system.



KU astronomers in 2014 with the original Tinsley telescope at its new home at Pulpit Rock. From left to right: Peter Detterline, John Loomis, Carlson Chambliss, Phill Reed. (Not seen is Gary Becker – he is the photographer of this picture.)

fully robotic 61-cm Ritchey-Chrétien telescope, which now hosts a high-precision CCD photometry system and a fiber-fed echelle spectrograph. Also added to the observatory were several solar telescopes in 2015 and a bright star photometry system in 2017. Most recently, a robotic 9.25-inch telescope system was donated to the observatory by KU lifelong learner Robert Brong upon his passing in 2017. Reed and his students are using the renovated observatory to study pulsating stars, supernovae, and mass transfer between interacting binary stars, and to discover exoplanets. Since the 2012 upgrade, KU co-discovered eight new exoplanets and published more than a dozen new research papers.

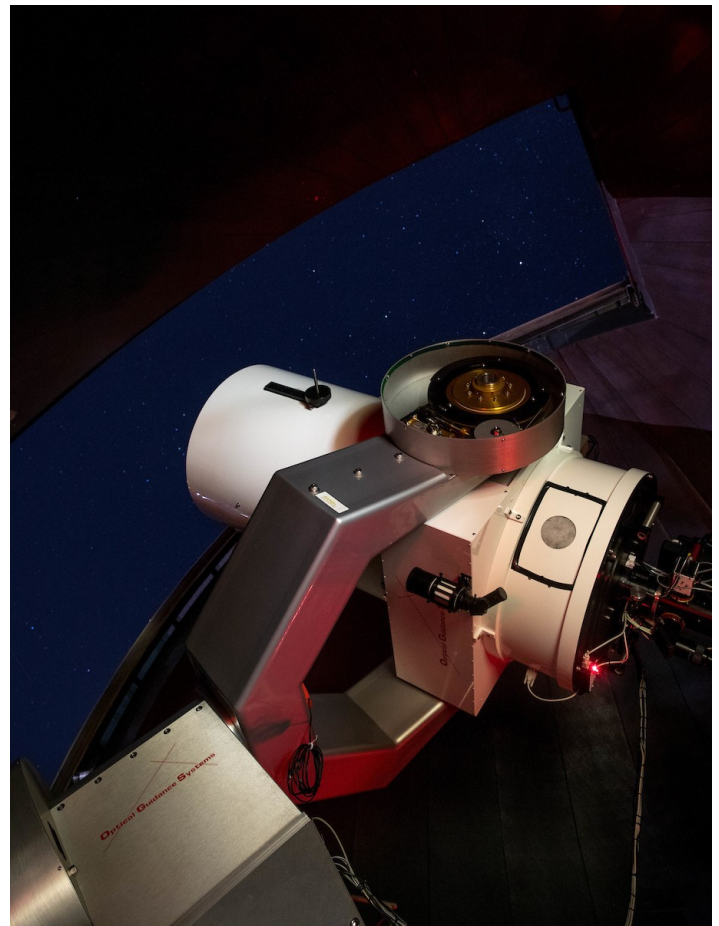
The original planetarium system and telescope were donated by KU to the Lehigh Valley Amateur Astronomical Society (LVAAS). The Spitz A-3-P is currently in use at the LVAAS planetarium on South Mountain in Allentown, and the Tinsley telescope is now located at LVAAS's Pulpit Rock Astronomical Park observatory near the Appalachian Trail at Hamburg Reservoir.



The Kutztown planetarium as it looks today, with its new seats from a 2004 renovation and the full-dome digital projection system that was installed in 2010.

The planetarium-observatory at Kutztown has proven itself as a very unique and effective teaching and research facility and it has maintained its impact on the community for five decades. For the past 50 years the Kutztown planetarium and observatory have been used for training, education, inspiration, and discovery! As it makes its way into the future, the KU astronomy program does so in the same fashion that it began a half century ago – with first class instruments and innovative educational programs.

In this Golden Jubilee of the Kutztown planetarium and observatory, we can proudly say “it’s good to be golden!”



Inside today’s Kutztown observatory with the 61-cm (24-inch) RC optical telescope that was installed in 2012.

The Spring 2018 Schedule of Public Events

We are offering the following events in celebration of 50 years of astronomy at the Kutztown Planetarium and Observatory. We’re featuring three new planetarium shows; *Phantom of the Universe*, about the search for dark matter, *The Secrets of Gravity*, an animated adventure exploring Albert Einstein’s theories, and *The Hot and Energetic Universe*, an introduction to high-energy astrophysics, and we’ll be including information about discoveries in astronomy that share our 50th anniversary. Our entertaining LASER light shows also follow the 50-year celebration theme with *Laser Led Zeppelin* and *Laser Beatles*.

The observatory will be open to the public as weather permits, in addition to some other special events. Stay tuned to the Planetarium & Observatory’s websites and Facebook page (facebook.com/KUPlanetarium) to be alerted to observing opportunities and other special events.

The Planetarium’s latest upgrade to the “9000 series of the Heuristically programmed Algorithmic (HAL) computer system” will provide a flawless planetarium experience this semester!

DATE	TIME	EVENT	COST
2 / 22 / 2018	7 pm	“Phantom of the Universe” Planetarium Show	FREE
3 / 8 / 2018	7 pm	“The Secrets of Gravity” Planetarium Show	FREE
3 / 8 / 2018	8 pm	“Laser Led Zeppelin” LASER Light Show	\$ 5.00 (tickets at the door)
4 / 5 / 2018	7 pm	“The Hot & Energetic Universe” Planetarium Show	FREE
4 / 5 / 2018	8 pm	“Laser Beatles” LASER Light Show	\$ 5.00 (tickets at the door)
4 / 26 / 2018	7 pm	Space Invaders Competition	FREE (registration required)