The Brashear Time Capsule

"On March 24, 2015, I was inspecting the remains of the Brashear Factory when a member of the demolition crew announced to me he found a time capsule in the cornerstone of the building a few days ago. The decision was made to open the time capsule after several days of calls to various societies and organizations without results. We believed the entire event could be documented by the cameras we had available, and so all four of us watched in wonder as a small brass box sealed with solder was opened for the first time since John A. Brashear took his last look at its contents 121 years ago."

—Al Paslow, Antique Telescope Society

Reporting for the blog SpaceWatchtower, Glenn A. Walsh of Friends of the Zeiss, who has written extensively about astronomy and planetaria in the Pittsburgh, Pennsylvania, area, followed the story of the Brashear time capsule. (This article is primarily from Mr. Walsh’s blog.) He reported that a wall of the original factory building used by telescope-maker John A. Brashear in the latter part of the 19th century and the beginning of the 20th century collapsed on March 16, 2015, onto a nearby two-floor apartment building. The City of Pittsburgh (which owned the historic, yet dilapidated structure, vacant for about 20 years) found it necessary to demolish the remainder of the building.

The Brashear factory building had been officially condemned by the city in May 2012, due to facade and structural damage. Pittsburgh Mayor Bill Peduto had been trying to find funding to rehabilitate the historic building, but he told the Pittsburgh Tribune-Review that time had run out and the city could not afford the cost. As a City Councilman in 2012, the Mayor had been Executive Producer of a historic documentary, "Undaunted: The Forgotten Giants of the Allegheny Observatory," about the history of the Allegheny Observatory and John Brashear.

The building had been the headquarters of the John A. Brashear Company, which specialized in high-quality lenses and mirrors for telescopes and other optical devices. John Brashear placed the time capsule in a cornerstone of the factory building on August 14, 1894. Finished in May 1886, the Brashear factory building was accompanied by construction of a new home for John Brashear and his family next-door. Philanthropist and Pennsylvania Railroad Vice President William Thaw, Sr., provided the building free of charge, as well as the new home for the Brashear family. Both buildings...
GSU’S CENTER FOR HIGH ANGULAR RESOLUTION ASTRONOMY (CHARA) HAS NEW LEADERSHIP

To replace retiring CHARA Director Hal McAllister, Georgia State University announced the appointment of Dr. Doug Gies as Director of Interferometric Astronomy at GSU and Dr. Theo ten Brummelaar as Director of the CHARA Array at Mount Wilson (GSU’s premier astronomical facility).

CUREA SCHEDULED FOR JUNE 19–JULY 2, 2016

The CUREA (Consortium for Undergraduate Research and Education in Astronomy) program at Mount Wilson Observatory will be held this year from Sunday, June 19 through Saturday, July 2. This two-week residential program in observational astronomy combines classroom instruction with hands-on solar and stellar observing to introduce students to the physics of stars. For more information on the CUREA program, see — http://www.curea.org.

CARNEGIE LECTURE SERIES

Carnegie Observatories’ annual public lecture series will be held this spring on four Monday evenings: April 4, April 18, May 2, and May 16. Lectures will be held at the Huntington in Rothenberg Auditorium, 1151 Oxford Road, San Marino. Doors open at 6:45 p.m., lectures begin at 7:30 p.m. The lectures are free, but reservations are required. For details on the lectures, see the full announcement on page 6 of this issue.

THE BRASHEAR CONNECTION

This issue describes the discovery and archiving of contents of a “time capsule” found in Pittsburgh, Pennsylvania, during the demolition of the John A. Brashear factory. The Brashear name is well recognized by telescope historians and enthusiasts. The September 2015 issue of Reflections featured an article by John W. Briggs about the restoration of a 6-inch telescope on Mount Wilson. (Long-time Observatory supporter Don Nicholson is seen using the telescope in the accompanying photograph.) According to that article, “Its builder, the Warner & Swasey firm of Cleveland, Ohio, was the Rolls Royce of telescope engineering, and its 6-inch objective, made by the John A. Brashear Company, is unusually excellent.” The restoration of this historic telescope represents yet another connection between the distant past and the present at Mount Wilson.

—Bob Eklund
Look Through Our Telescopes

Information on the 60-inch telescope and 100-inch telescope viewing programs for 2016 is now online at www.mtwilson.edu/.

THE TELESCOPES

Mount Wilson Observatory’s 60-inch telescope was completed in 1908 by Observatory founder George Ellery Hale with funding from Andrew Carnegie. It was the world’s largest operational telescope until Hale went on to complete Mount Wilson’s 100-inch Hooker telescope in 1917. Among the many important discoveries from the 60-inch telescope was Harlow Shapley’s revelation in 1918 that, contrary to the then-accepted view, the Sun is very far away from the center of the Milky Way galaxy.

When the 100-inch telescope was completed, it was the largest in the world until 1948, only to be superseded by Palomar Observatory (also a project of G. E. Hale). It has been used in every kind of nighttime astronomical research, including studies of stars, nebulae, galaxies, planets and their satellites, and much more. The best-known among the many discoveries made with this telescope were those of Edwin Hubble and Milton Humason in the 1920s, proving that spiral nebulae are distant galaxies outside the Milky Way, and that the universe is expanding. Now retired from active scientific service, the 60-inch and 100-inch telescopes are the largest in the world made available to the public and offer an exceptional astronomical experience.

FEES

For the 60-inch telescope, the 2016 fee rates are $950 per half night and $1700 per full night for a group of up to 25 people. For the 100-inch telescope, the 2016 fee rates are $2700 per half night and $5000 per full night for a group of up to 18 people.

The Mount Wilson Institute provides Session Director(s) and a Telescope Operator for viewing sessions.

Occasional individually ticketed nights are announced during the season from the Observatory website and from the Observatory Facebook page (links from www.mtwilson.edu).

RESERVING A NIGHT

For instructions on how to request an observing session on the 60-inch or 100-inch telescope, click Visitor Information on either the 60-inch Observing webpage or the 100-inch Observing webpage, and then refer to the sections Requesting Viewing Through the 60-inch Telescope (or 100-inch Telescope) and Viewing Fee.

More information:
www.mtwilson.edu/60in.html
www.mtwilson.edu/100in.html
were added to the National Register of Historic Places in 2012. The factory and the Brashear home were about a block away from the original Allegheny Observatory.

For a time John Brashear was Acting Director of the Allegheny Observatory, and later Acting Chancellor of the Western University of Pennsylvania (today known as the University of Pittsburgh); in both cases, he refused permanent appointment to those positions. He was one of three Pittsburgh civic leaders to be instrumental in the design of Andrew Carnegie’s Carnegie Technical Schools (today known as Carnegie Mellon University). And, he single-handedly raised the money, in one summer, needed to build the new and much larger Allegheny Observatory building dedicated in 1912.

John Brashear died at age 79 in 1920. His ashes along with those of his wife, as well as the ashes of another former Allegheny Observatory Director, James E. Keeler, and his wife and son, are interred in a crypt in the basement of Allegheny Observatory.

After the wall collapsed, the Brashear factory building was demolished under an emergency order. While inspecting the remains of the near-demolished building, the demolition crew showed Al Paslow of the Antique Telescope Society a time capsule. It was decided to open the box and photo-document the contents, which included:

- A letter from John Brashear.
- Newspaper articles from 1891 to 1894.
- Photographs of John Brashear’s family, including his mother and father.
- Photographs of prominent citizens of Pittsburgh and Allegheny City (Pittsburgh’s “twin city” at that time, where the factory and Allegheny Observatory were actually located; Allegheny City was annexed to Pittsburgh in 1907 and became Pittsburgh’s North Side).
- A piece of glass with the inscription, “One of the first pieces of Optical glass Made in America.”
- A lock of hair from John Brashear’s wife, Phoebe, inside a small envelope so-labeled.
- A letter from Worcester Reed Warner and Ambrose Swasey, owners of Cleveland telescope manufacturer Warner and Swasey Company, congratulating the Brashear Company on the completion of the new factory building (Brashear and Warner and Swasey collaborated on several projects).
- A book labeled “In Memoriam William Thaw” complete with photographs (John Brashear’s mentor who had paid for the land and construction of the factory building; William Thaw had died in 1889).
- Plans and blueprints for the factory building.

When Antique Telescope Society President Bart Fried had the opportunity to inspect the time capsule, he noted that it includes approximately 60 items. In addition to the items documented at the time capsule’s opening, Mr. Fried reported that the following items were also found therein, as well as two sealed envelopes:

- An 1894 letter from Allegheny Observatory Director Samuel Pierpont Langley (who became the third Secretary of the Smithsonian Institution in 1887) to John Brashear, which led to the first
meeting of the two historic astronomers. Mr. Fried noted: “That Brashear saved it (the letter) for 20 years and then thought to put it in the capsule speaks to his sense of history as well as his gratitude towards his very good friend Langley.”

• Second photograph of John A. Brashear Company employees, which includes what may be the only photograph of John Brashear’s son, Harry, who died a year after the photograph was taken at age 23.

• A note accompanying one of the sealed envelopes stating it contains several items including a rare photograph of Dr. Henry Draper, a pioneer in the fields of astrophotography and making large telescopes. Draper assisted Brashear, teaching him the art and science of making telescope mirrors. Draper died in 1882, just as Brashear was starting his telescope-making business. The letter was written by Draper’s wife, Anna Draper.

• A letter from Charles S. Hastings, an optical physicist who had been a professor at both Johns Hopkins and Yale Universities, who had collaborated with John Brashear on several telescope projects.

As there always seems to be a sports connection, among the items found is a photograph showing Recreation Park on the North Side, considered the birthplace of professional football and site of Pittsburgh’s first baseball victory in the National League. It is believed to be the only remaining photograph of the stadium, according to Andrew Masich, president and CEO of the Senator John Heinz History Center. The cyanotype print, whose focal point is the old Henry Berger Observatory, shows Recreation Park in the background. The stadium, with wooden grandstands and a capacity of 17,000, occupied land at the intersection of Allegheny and Pennsylvania avenues on the North Side. On the back, Brashear wrote: “View of Allegheny near Recreation Park base ball grounds from near Henry Burger’s (sic) Observatory.” The history center’s only previous depiction of the stadium was an insurance map showing its layout, according to Anne Madarasz, museum division director.

A dispute over ownership of the time capsule arose. The City of Pittsburgh had owned the land and building since 2012, but the demolition company believed the emergency city demolition contract allowed them to keep all salvageable materials from the demolition. The Heinz History Center held temporary custody until the resolution of the issue in July 2015, when the History Center became the permanent home of the collection of historic relics after a sales agreement was reached with the demolition company. Relatives of John Brashear have donated an additional 40 papers and artifacts to the History Center.

Bart Fried of the Antique Telescope Society consulted with the History Center in the effort to preserve the time capsule and its contents. Other members of the Antique Telescope Society also participated in the series of events, including Al Paslow, John Briggs, and Janet Gunter.

This article is primarily the writing of Glenn A. Walsh. We thank him for his continuing efforts in support of popular astronomy and astronomical history.

• For much more, visit this website and follow the links at the bottom of the page — http://spacewatchtower.blogspot.com/2015/03/brashear-telescope-factory-time-capsule.html
• Al Paslow’s catalog of photographs he took at the site can be viewed at — https://al-paslow.smugmug.com/Other/John-Brashear-Time-Capsule/
**2016 Astronomy Lecture Series**

**MONDAY, APRIL 4**

**LAS CAMPANAS OBSERVATORY: A SOUTHERN WINDOW ON THE UNIVERSE**

Dr. Mark Phillips, Director; Las Campanas Observatory; Associate Director for Magellan; Carnegie Institution for Science

For 45 years, the Las Campanas Observatory of the Carnegie Institution for Science has provided a superlative window in the Southern Hemisphere for exploring the wonders of our universe. Located in northern Chile, the Las Campanas telescopes have yielded many breakthrough discoveries: giant voids and immense structures in the distribution of galaxies, the first detection of a protoplanetary disk around a neighboring star, the first naked-eye supernova since the invention of the telescope, and much more. Dr. Phillips will recount the spectacular growth of astronomical research in this unique land, while looking ahead to the bright future of scientific discovery that awaits Las Campanas.

**MONDAY, APRIL 18**

**A SHORT HISTORY OF PLANET FORMATION**

Dr. Anat Shahar, Staff Scientist, Geophysical Laboratory, Carnegie Institution for Science

Our solar system formed 4.5 billion years ago in an extremely chaotic environment and has evolved significantly over that time. What we see today is an organized inner solar system with four very different terrestrial planets. Join Dr. Shahar for an exploration of these planets as we try to understand their diversity. By analyzing rocks we can hold in our hands today and conducting experiments in the laboratory, we can probe which processes and conditions the terrestrial planets experienced billions of years ago.

**MONDAY, MAY 2**

**EXOPLANETS**

Dr. Kevin Schlaufman, Assistant Professor of Physics and Astronomy, Johns Hopkins University; Carnegie-Princeton Fellow, Carnegie Observatories and Princeton University

While it has been only 20 years since astronomers first discovered planets outside of our solar system, we are already aware of several planets that could have liquid water on their surfaces. In just 10 years, we will have the technological ability to search for signs of life, like oxygen and methane, in the atmospheres of a few select exoplanets. Dr. Schlaufman will tell the story of exoplanets to date, and outline the progress we will soon see in the search for life elsewhere in our galaxy.

**MONDAY, MAY 16**

**THE SECRET LIVES OF GALAXIES**

Dr. Katherine Alatalo, Hubble Fellow, Carnegie Observatories

The Hubble sequence of galaxies resembles a simple classification chart, yet underneath the neatly aligned shapes and colors lie complex and violent histories. Through radio, infrared, ultraviolet and optical astronomy, we can deduce these histories — and the future. Nearby examples of every stage in the Hubble sequence provide living galactic fossils that reveal their 10 billion years of evolution. Dr. Alatalo will tour the Hubble sequence, exploring three avenues to galactic transitions: the quiet, slow fade; the violent merger; and the quietly violent evolution of a galaxy, likely due to a supermassive black hole in its center. By exploring how each piece of the puzzle fits with every other piece, we can understand the evolution of the universe and fundamental questions of how we got here.

Dates: Lectures are on Monday evenings — April 4, April 18, May 2, and May 16.

Location: Lectures will be held at the Huntington in Rothenberg Auditorium, 1151 Oxford Road, San Marino.

Please visit www.brownpapertickets.com/event/2506505 to reserve.

Doors open at 6:45 p.m. Each lecture will be preceded by a brief musical performance by students from the Colburn School.

Lectures start at 7:30 p.m. Light refreshments will be available. The Huntington Café will also be open from 5:30 to 7:15 p.m., serving a prix fixe buffet and selected à la carte items.

The 2016 Astronomy Lecture Series is organized by Dr. John Mulchaey, Director of the Observatories.

For more information, please telephone 626.304.0250, or visit www.obs.carnegiescience.edu or www.huntington.org.
Extra Weekend Tours and Solar Viewing

by Michael Rudy

Again this year we are offering a second, shorter docent-led tour on weekends at 2 P.M. (1 hour), June through August. Meet at the Cosmic Café to purchase your tickets.

We are also planning on continuing a program of solar observing for the public on clear, sunny Saturdays and Sundays, April through October — 2 P.M. to 4 P.M. Visitors can safely observe the Sun using our portable 100-mm Lunt solar telescope, generously donated by Lunt Solar Systems and Celestron, free of charge. Our founder, George Ellery Hale, was particularly interested in the Sun, as it is the easiest object by which to study astrophysics, the purpose of Mount Wilson Observatory.

You will find the telescope and our telescope operator by the Pavilion, in back of the Cosmic Café.

DISCOVER THE ASTROPOET IN YOU

by Bob Eklund

Have you ever looked up at the Moon or stars and said, “That’s so beautiful, I wish I could write a poem about it?” Well, now may be the time for you — or your children — to do just that, and you could win an international award in the process.

The global organization devoted to astronomy outreach and education, Astronomers Without Borders (www.astronomerswithoutborders.org), invites children and adults everywhere to submit poems to its annual AstroPoetry Contest. The contest, in three categories — children, young adults, and adults — is open for poetry submissions from now through April 30, 2016. Poems may be in any form, but should be related to astronomy, space, or the night sky. For details and the submission form, go to: http://astronomerswithoutborders.org/gam/global-astronomy-month-2016/astropoetry.html

As an example, here’s a poem from one of the Young Adult winners in AWB’s 2014 contest:

PLUTO
by Rachel Pribble, Broken Arrow, Oklahoma

Pluto
Forgotten Planet
Isolated, neglected, frigid
Small but worthy rock
Planetoid

Classroom teachers are especially encouraged to use this contest as a student project, which would promote an imaginative mix of both English writing skills and scientific thinking. Good luck!
HOW TO GET TO MOUNT WILSON OBSERVATORY

From the 210 freeway, follow Angeles Crest Highway (State Highway 2 north) from La Cañada Flintridge to the Mount Wilson–Red Box Road; turn right, go 5 miles to the Observatory gate marked Skyline Park, and park in the lot below the Pavilion. Visit the Cosmic Café at the Pavilion, or walk in on the Observatory access road (far left side of parking lot) about 1/4 mile to the Observatory area. The Museum is opposite the 150-foot solar tower.