

CENTER FOR HISTORY OF PHYSICS NEWSLETTER Vol. XXXIX, Number 1 Spring 2007 One Physics Ellipse, College Park, MD 20740-3843, Tel. 301-209-3165



Mary Calvert using the 12-inch refractor at Yerkes Observatory, February 23, 1926. She was Edward E. Barnard's niece, and after his death, co-editor of his book A Photographic Atlas of Selected Regions of the Milky Way published in 1927 by the Carnegie Institution of Washington. Yerkes Observatory photo, courtesy AIP Emilio Segrè Visual Archives

Niels Bohr Library & Archives: What's In a [New] Name?

by Joe Anderson

hile a rose may be a rose, a library isn't an archive and vice versa. In January 2007 the Niels Bohr Library of the American Institute of Physics (AIP) adopted an expanded name: Niels Bohr Library & Archives—which reflects the reality of our work today. Back in 1962 when the Library was founded, it was designed as a repository for books and journals in the history of physics and allied fields. But in 1965 when the Library became part of the newly created AIP Center for History of Physics, it adopted an archival role that has expanded over time, albeit a new kind of archival program that supports and encourages other repositories in their work to document the history of physics, astronomy, geophysics, etc. (The archives has extensive holdings, primarily of the records of AIP and its Member Societies, along with some other papers and records for which a more appropriate home could not be found elswhere.) In mid 2006 the Niels Bohr Library was administratively separated from the Center for History of Physics as an independent division of the AIP, while sharing operations.

Publication of the Collected Works of Niels Bohr Completed

by Finn Aaserud

ith the publication of the twelfth and final volume of the Niels Bohr Collected Works, one of the very greatest physicists of the twentieth century is brought before the public in one of the premier works of scholarship in modern history of science. Planning for the publication of the Collected Works began soon after Bohr's death in 1962. The driving force behind the project was Bohr's close collaborator, the Belgian physicist and historian of science Léon Rosenfeld, who was the first General Editor of the series. The first volume, covering the early years up to 1911, was published in 1972 with Jens Rud Nielsen (1894–1979) as editor. However, this was the only volume that Rosenfeld would see, for he died in 1974. The project, originally conceived as a ten-year effort, was not completed until well into the next century.

After an interim period with Rud Nielsen doing the brunt of the work, Erik Rüdinger was named General Editor in 1977. Rüdinger had served as Bohr's scientific assistant for a brief period near the end of Bohr's life. In Volume 5 (published 1985), the first under Rüdinger's control, Rüdinger laid out the general editorial policy and practice that have been followed since. At the centennial of Bohr's birth in 1985 the Niels Bohr Archive (NBA), which had existed in name for a number of years already, was formally established as an independent institution under the Danish Ministry of Education. Rüdinger continued as Director of NBA and General Editor of the Collected Works. When he retired as Director in 1989 to take up new challenges, three Volumes (7, 10 and 11) were still being planned for future publication. The project has just been completed under Finn Aaserud. Aaserud spent four years as postdoctoral Associate Historian at the AIP Center for History of Physics before moving to Copenhagen, where he succeeded Rüdinger as Director of NBA and General Editor.

Over the years, many prominent representatives of the several fields to which Bohr contributed have edited individual volumes in the series (see the full list, sidebar). Their work has been entirely voluntary and has more often than not been conducted concurrently with full-time jobs.

Whereas the first nine volumes are mainly devoted to Bohr's science, the remaining volumes contain Bohr's publications outside physics. *Volume 10* is devoted to his philosophy. The published documentation of Bohr's other extra-scientific activities proved so large that the volume originally conceived as the

Emilio Segrè Visual Archives Makes Photos More Accessible

by Heather Lindsay

he photographs in this newsletter from the Emilio Segrè Visual Archives (ESVA) are all newly available through our online searchable photo database at http://photos.aip.org/ With the software introduced at the beginning of 2006 now settled in, we have been able to focus on adding new images online, and managed to catalog over 1900 new images last year. We have also been able to go beyond portraits by putting up the images of instruments and institutions that we have in our files.

Some of the new keywords: spectroscope, telescope, observatory, calorimeter, cyclotron, accelerator, microscope, CERN, Fermilab, General Electric, Westinghouse, Gottingen, Columbia, Haigerloch (site of the 1944 German attempt to build a reactor), Berkeley, Brookhaven, Harvard College Observatory, Mount Wilson Observatory, Palomar Observatory.

This year the ESVA celebrates its 7th successful year working with the UK based 'Science Photo Library.' Since summer of 2000, at their request, we have been providing them with digital scans of photographs along with any information we have about them. To date we have sent them over 200 photographs, mostly of Nobel Laureates. They then conduct further research on the photos, clean up the digital scans if needed, and make them available through their website http://www.sciencephoto.com/. This has proven to be a good way to make our photographs available to a wider international audience, and also generates revenues that can help in acquiring and cataloging new photos.

The Sokendai Oral History and **Archives Project**

by Kenji Ito, Associate Professor, The Graduate University for Advanced Studies (Sokendai), Kanagawa, Japan

n oral history and archives project on physics and other scientific fields is underway at the Graduate University for Advanced Studies, known as Sokendai, after its Japanese name, Sôgô Kenkyû Daigakuin Daigaku. Sokendai is a unique Japanese university. The university itself is new and not well-known, but it is composed of 16 leading national research institutes (inter-university research institutes or IURIs) in physics and other natural sciences, humanities, and social sciences in various places in Japan. Some of them are not only top research institutes in the country, but among the leading research centers in the world.

The goal of Sokendai's oral history and archives project is to collect oral histories related to IURIs and to facilitate development of archives at each institute. It also aims to serve as the research center for the history of the IURIs. Our project thus has two main activities. First, we coordinate catalogs of the archives at IURIs. Several IURIs have developed or intend to develop their own archives separately. We are trying to set a standard for online catalogs of the archives following the EAD (Extended Archival Description) standard, and establish a common platform to allow searching over all Sokendai's IURIs. Second, we conduct oral history interviews at these national institutes. The main theme of these interviews is studying the process by which an IURI was established in various disciplines. We are presently concentrating on a few of the institutes and conducting extensive interviews for an in-depth case study. Currently we have two main foci. One is KEK (National Laboratory for High-Energy Physics) in Tsukuba, and the other is the Subaru Telescope of Japan's National Observatory in Hawaii.

Our project on KEK will be unprecedented in a couple of ways. In its own right, KEK is one of the most important laboratories in the world, comparable to CERN. But whereas a comprehensive history of CERN has been written by leading scholars, much less has been done about KEK. Sokendai's project attempts to explore various aspects of this large laboratory, conducting interviews not only with leading scientists of the laboratory, but also with graduate students, technicians, secretaries, spouses of scientists, and local residents in the neighborhood. By illuminating the laboratory's relationship with outsiders, we combine community oral history with studies of laboratories and institutional history.

It is also notable that this project is in itself an attempt to emulate a "big science" approach. We organize collaborative research projects and make long-term plans. Indeed, the project aims to integrate not only those who work at Sokendai or its IURIs around the country, but also scholars from other universities and even from other countries. The USbased scholars Sharon Traweek (University of California, Los Angeles) and Mary Palevsky (University of Nevada, Las Vegas), have conducted interviews for this project. We are actively seeking collaborators from overseas and invite visiting scholars.

The Sokendai Oral History and Archives project is hosted at and funded by the Hayama Center for Advanced Studies in Shonan Village, Hayama, Kanagawa, where Sokendai has its headquarters. The core team of the project consists of two faculty members, some postdocs, and a few graduate students. In addition, we have many collaborators at Sokendai's IURIs and other academic institutions. Historian of physics Kenji Ito took charge of this project in April 2007. His email address is ito kenji@soken.ac.jp. Currently the project has a website only in Japanese, at http://hayama.soken.ac.jp/archive .

History of science... protects scientists from the sins of dogma—the arrogant belief that science is infallible, unchallenged and final.... It encourages young scientists not to worship what is already known but to question it.

—Pangratios Papacosta

(Collected Works of Niels Bohr, continued from page 1)

last had to be divided into two separate ones. *Volume 11* covers Bohr's political interests and activities, notably his mission, in the wake of the atomic bomb, for what he called an "open world" between nations. *Volume 12* is devoted to Bohr's efforts as a popularizer of physics and, in particular, his published tributes to a variety of predecessors, teachers, colleagues, friends and family. *Volumes 11* and *12* are particularly successful at bringing forth Niels Bohr as a person and in shedding light on aspects of Bohr's activities that have so far remained undocumented in the English language.

The Collected Works claim completeness only with regard to Bohr's publications. Manuscripts and letters are included selectively to illustrate particular points. The main language is English; any contribution previously available only in another language, typically Danish, appears in the original (often as facsimile) followed by a translation. Each of the various sections begins with an introduction, sometimes quite extensive, written by the editor of the volume in question. The volumes are illustrated with rare photos, and Bohr's contributions, especially those directed exclusively to a Danish audience, are annotated for an international readership. Each volume includes an index. In addition, *Volume 12* contains a chronological list of Bohr's publications, with reference to where they can be found in the Collected Works.

At present, several of the volumes are out of print. Elsevier, the publisher, has promised to reprint the missing volumes by 2008 and to make the full set available at a favorable price. For further information contact Finn Aaserud, Niels Bohr Archive, Blegdamsvej 17, DK-2100 Copenhagen, Denmark; phone: +45 353 25220, email: aaserud@nbi.dk. The Archive's homepage is www.nba.nbi.dk

Preserving the History and Heritage of Agilent Technologies, Part II

by Karen Lewis (For Part I see Fall 2006 Newsletter, p.3)

hy a History Center? Many companies use their histories as a marketing tool, but visitors to the Agilent Technology's History Center learn about much more than current business prospects. At the History Center, visitors are introduced to Silicon Valley's formative influences—a company with a nearly seventy-year tradition of science and technology invention and model business practices.

On November 18, 1999, Agilent Technologies set a record for Silicon Valley with the largest stock 'Initial Public Offering' up to that time (at \$2.1 billon). However, the actual story of Agilent began in 1939 with two people, Bill Hewlett and Dave Packard, working in a now legendary garage at 367 Addison Avenue in Palo Alto, CA. Although attempts were made as early as 1970 to preserve Hewlett-Packard Company's historical material, a professionally administered archival program did not officially begin until 1987 as a 50th anniversary project. During that year it became a permanent program within Corporate Public Relations Services, charged with identifying, collecting, preserving, and providing access to materials that document the company's history, philosophy, policies and products.

The Niels Bohr Collected Works. The first three *Volumes* are published under the name of Léon Rosenfeld (1904–1974) as General Editor, *Volumes 5* through 9 are published under the general editorship of Erik Rüdinger (*Volume 7* jointly with Finn Aaserud), and Finn Aaserud is General Editor of *Volumes 10* through *12*. The *Volumes* are published by North-Holland/Elsevier.

Vol. 1, Early Work (1905–1911), ed. J. Rud Nielsen, 1972.

Vol. 2, Work on Atomic Physics (1912–1917), ed. Ulrich Hoyer, 1981.

Vol. 3, The Correspondence Principle (1918–1923), ed. J. Rud Nielsen. 1976.

Vol. 4, The Periodic System (1920–1923), ed. J. Rud Nielsen, 1977.

Vol. 5, The Emergence of Quantum Mechanics (mainly 1924–1926), ed. Klaus Stolzenburg, 1984.

Vol. 6, Foundations of Quantum Physics I (1926–1932), ed. Jørgen Kalckar, 1985.

Vol. 7, Foundations of Quantum Physics II (1933–1958), ed. Jørgen Kalckar, 1996.

Vol. 8, The Penetration of Charged Particles through Matter (1912–1954), ed. Jens Thorsen, 1987.

Vol. 9, Nuclear Physics (1929–1952), ed. Rudolf Peierls, 1986.

Vol. 10, Complementarity beyond Physics (1928–1962), ed. David Favrholdt, 1999.

Vol. 11, The Political Arena (1934–1961), ed. Finn Aaserud, 2005.

Vol. 12, Popularization and People (1911–1962), ed. Finn Aaserud, 2006.

In 1999, when the test and measurement portions of Hewlett-Packard were spun off to become Agilent technologies, the collection was divided along product lines. The HP company archives founder, Karen Lewis, went to Agilent with the test and measurement portion of the collection. In 2005 ownership of the collection was transferred to the Agilent Technologies Foundation. It is in this context that the Foundation's executive director, Karen Lewis, developed the History Center, which puts a public face on the company's contribution to local, state national and international history.

When the Agilent Archives was transferred to the Agilent Technologies Foundation the collection was appraised. According to the appraiser, author and history of science specialist Jeremy Norman, "The Agilent Company Archives contains primary



A famous shot of Bill Hewlett and Dave Packard in their garage in Palo Alto, 1939. The instrument is a "200 series" audio oscillator, Hewlett Packard's first product. They picked the number because they thought it sounded good. Courtesy Agilent History Center

source materials of the highest possible historical value of the type most sought after and used by historians of twentieth century applied science, technology and business. [It is] one of the most historically significant company archives."

Core elements of the collection include: Printed materials such as annual reports, product catalogs, and company publications, such as the first weekly employee newsletter, dating back to 1943, which documents the culture of the World War II years in a West Coast, applied technology company. Visual Collections that illustrate products and process, plants, activities and events and employees from 1939 to the present. The Oral History Collection which contains over one hundred interviews with former executives, scientists, engineers, salespeople and office and factory workers. The Archival Material forms the largest element of the collection, and includes the records of top-level planners, decision makers and scientists. This material is regularly transferred to the History Center's Archives for permanent preservation.

The History Center provides research services and interpretive tours for the general public. Within the context of the growth and development of California's dynamic Silicon Valley, the collections and the guided tours provide an explanation of the development and evolution of applied technology in the 20th and 21st centuries, the history of globalization of the technology business and the roots and practices of a renowned business culture, emulated the world over.

For further information please feel free to contact Devon Dawson at 408-553-7571, email: devon_dawson@agilent.com

Exploring Nanotechnology's Hidden History By W. Patrick McCray

H istorians have paid scant attention to nanotechnology and nanoscience research, despite the fact that in the United States alone, government and corporate sources have invested well over \$10 billion in it since 2001. The lack of rigorous historical analysis is unfortunate, for anticipating future societal and ethical implications of nanotechnology will rest on a coher-

ent and comprehensive understanding of its origins and current contexts. Nanotechnology can be seen less as a revolutionary break with the past than as part of the effort, familiar to historians, to develop technological solutions to social and economic problems. Developing this interpretation will demand an understanding of nano's history at multiple levels of analysis—research fields, instrumentation, individual contributions, national and state policy, and as an example of a technologically-based social movement with competing utopian and dystopian viewpoints.

To help address such issues, in October 2005 the National Science Foundation allocated \$33 million to "inform the public and explore the implications of nanotechnology." About a third of this funding went to establish two national Centers for Nanotechnology in Society: one at Arizona State University and the other, which I co-direct, at the University of California, Santa Barbara (CNS-UCSB).

One of the main research initiatives at the CNS-UCSB is exploring the historical context of what may best be called the "nano-enterprise." Our working group is composed of myself, Timothy Lenoir and Eric Gianella at Duke University, Cyrus Mody at the Chemical Heritage Foundation, and Mary Ingram-Waters, who is one of several graduate research fellows funded by the CNS-UCSB. Together, we are looking into key aspects of nanotechnology's history including the evolution of state and federal policies, the role of grant officers in shaping research programs, and the importance of novel research areas such as spintronics and molecular electronics.

Our research takes advantage of diverse methodologies and sources. These include collecting oral histories (thanks, in part, to funding from the AIP Center for History of Physics) and deploying sophisticated data mapping and visualization tools developed by Lenoir. More traditional resources are also brought to bear, including scientific publications, conference reports and so forth. However, already I can note one unfortunate and disturbing trend—nanoscience, like almost all 21st-century techno-scientific endeavors, relies on communications that are ephemeral in nature (web-published reports, e-mail, etc.). The relative paucity of correspondence and other essential documentation presents a serious challenge to all scholars and archivists attempting to understand this area of scientific research and one can only imagine the problem worsening with time.

Nanotechnology's history already has a "standard model" which is often used to frame general articles. This begins with Richard Feynman's famous 1959 after-dinner speech to members of the American Physical Society ("Plenty of Room at the Bottom"). The standard model continues with G.K. Binnig and H. Rohrer's development of the scanning tunneling microscope, for which they received the 1986 Nobel prize, Richard Smalley's 1996 Nobel prize for helping discover buckyballs, and—*ta-da!*—the passage of the National Nanotechnology Initiative in 2000.

While this story provides a tidy historical trajectory replete with famous scientists and top-shelf prizes, there are other, untold or less examined histories of nanotechnology. Already scholars have begun to debunk the familiar narrative by pointing out that Feynman's speech had little effect in galvanizing nanoscience research. Another example of a key but neglected item in nano's history is the development of molecular beam epitaxy. Perfected by scientists like John Arthur and Al Cho at Bell Laboratories in the 1970s, this technique allows for the precise fabrication of new materials and nano-structures. Although MBE is now four decades old and is an established part of the solid-state physicist's toolkit, it doesn't typically appear in the standard model of nano history.

Another facet of the history that scholars at the CNS-UCSB are looking into is the role of public imagination in fostering policies for nano research. As Howard McCurdy showed in his excellent 1997 book *Space and the American Imagination*, public visions of future technologies play an important role in establishing support or opposition for policy. In the nano realm, futurist groups took to cultivating an environment of technological optimism, within which political and social acceptance of new (and sometimes "fringe") technologies like nano could flourish. Just as interesting is the fact that some futurist groups initially devoted to promoting the space frontier in the 1970s shifted to pro-technology activism, including nano, in the 1980s.

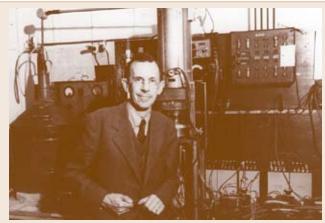
Nanotechnology's advocates have pointed out how the subject brings together scientists from disparate disciplines to work on common research topics. In the same fashion, the historical context of nanotechnology offers tremendous research prospects for historians along with opportunities to collaborate with scholars from fields like sociology, economics and anthropology. In view of the continued enthusiasm, media coverage, and funding that nanotechnology attracts, historians of science and technology have an opportunity, perhaps even a responsibility, to challenge the "standard model" and establish a more nuanced understanding of nanotechnology history, how it connects to other bodies of scholarship, and how it may inform the public and policy makers.

For further information contact Patrick McCray, pmccray@cns.ucsb.edu

The AT&T Archives and History Center Documents the Complex History of Telecommunication Corporations

By William D. Caughlin, Corporate Archivist, AT&T Inc.

cholars interested in 130 years of scientific and technological innovations, pioneered by AT&T will find the company's archival collections a matchless source for their research. Historians will also find the collections indispensable for understanding the bewildering number of mergers, acquisitions and divestitures that have shaped the telecom industry since 1876. The AT&T Archives and History Center, with locations in San Antonio, TX (AT&T world headquarters) and Warren, NJ (30 miles from New York City), is reputedly the largest corporate archives in the United States and a genuine national treasure. While in separate settings, the two repositories are unified operationally. The combined collections contain over 40,000 cubic feet of documents; 1,500,000



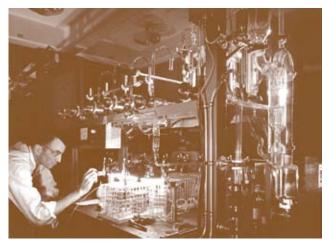
The physicist Clinton J. Davisson, the first Bell Labs researcher to win a Nobel Prize, in his laboratory, ca. 1930s.
Courtesy AT&T Archives and History Center

photographs; 50,000 films and videos; and 20,000 artifacts documenting AT&T's storied past, as well as the complicated history of American telecommunications.

In 1984, the Bell System, owned by the former American Telephone and Telegraph Co. (a.k.a. "Ma Bell," which became AT&T Corp. in 1994), was split up in the largest corporate reorganization in U.S. history. Out of the divestiture was born Southwestern Bell Corp. (renamed SBC Communications Inc. in 1995) and six other "Baby Bells" who each inherited local Bell operating companies that were over 100 years old. Soon after the signing of the Telecommunications Act of 1996, SBC Communications Inc. began acquiring some of its siblings: Pacific Telesis Group (1997), Southern New England Telecommunications Corp. (1998) and Ameritech Corp. (1999). In a strategic alliance, SBC and BellSouth Corp. pooled their wireless properties, forming Cingular Wireless, LLC (2000). Upon the acquisition of its earlier parent AT&T Corp. (2005), SBC renamed itself AT&T Inc. The "new" AT&T soon purchased BellSouth (2006) to become the largest telecom company in the world.

The San Antonio collections are centered on records of the regional holding companies—SBC Communications Inc., Pacific Telesis Group, Southern New England Telecommunications Corp., Ameritech Corp., and BellSouth Corp.—and their predecessors and subsidiaries, which trace the evolution of local landline and wireless phone service in 22 states (1878-present).

The Warren holdings comprise records of AT&T Corp. and its predecessors including the original Bell Telephone Company, as well as former subsidiaries Western Electric Company, Inc. and Bell Telephone Laboratories, Inc. These materials mainly illustrate technological innovations, such as long-distance voice and data services, and their impact on American society (1869-present). The "old" AT&T Archives assumed its current form twenty years ago with the consolidation of three distinct collections: the AT&T Corporate Collection, formerly housed at AT&T's old headquarters in lower Manhattan; the Western Electric Collection, from AT&T's previous manufacturing subsidiary; and the Bell Telephone Laboratories Collection, the one most apt to attract historians of physics. The latter documents the history of research and development at AT&T, with



A Bell Labs scientist studies a helium-neon laser to determine the relationship of power output to the length of the cavity, ca. 1963-1964. Courtesy AT&T Archives and History Center

considerable material pre-dating the 1925 creation of Bell Labs itself. This collection remained at AT&T even after the 1996 spin-off of Lucent Technologies.

Although the AT&T Archives and History Center exists to serve company activities and is not open to the general public, the Archives invites serious scholars to make use of the collections. Material is generally available for scholarly research thirty years after its creation. We are delighted to supply digital copies of photographs or other select non-proprietary documents at no cost. Research visits, however, are the best means to access the collections, and must be scheduled in advance. Onsite databases are available to researchers for identifying archival materials. For more information, please contact William Caughlin, Corporate Archivist, AT&T Archives and History Center, 4949 Von Scheele, San Antonio, TX 78229; phone 210-697-1763; e-mail william.d.caughlin@att.com; or George Kupczak, Area Manager of Archival Collections, AT&T Archives and History Center, 5 Reinman Road, Warren, NJ 07059; phone 908-226-2319; e-mail george.kupczak@att.com. And for additional information on the holdings at the Warren facility, please see "History of Physics Resources at the AT&T Archives" in the Spring 1998 issue of this Newsletter, online at http://www.aip. org/history/newsletter/spr98/att-arc.htm.

50th Anniversary of International Geophysical Year Commemorated with Meetings and **New Research**

his year geophysicists are celebrating the 50th Anniversary of the premier historical landmark of their field, the International Geophysical Year. The IGY, actually 18 months in 1957-1958, built on a tradition of International Polar Years that were held in 1882-1883 and 1932-1933, but was far more comprehensive. An armada of ships, airplanes and land expeditions took an unprecedented "snapshot" of the planet's condition. This unique global project is not being repeated today, for global monitoring has become routine. That is due partly to greatly expanded funding of traditional means of observation, and still more to the advent of satellite observations—starting with the Soviet Sputnik, launched under the IGY banner in 1957. For some geophysical topics it is still useful to mount a specially intensive effort over a limited period, and this year a new International Polar Year (IPY) has gotten underway in the arctic regions, while an International Heliospheric Year (IHY) has begun to probe the solar-terrestrial relationship.

In recent years several historians have described how the initial IGY funding was motivated in good part by Cold War "national security" considerations. Governments not only wanted scientific data, but competed for prestige and for information on remote regions where they might someday do battle. The current IPY and IHY are motivated by concerns for "security" in a much larger sense, with special attention to the threat of climate change and in particular global warming caused by human emissions of greenhouse gases. This focus is peculiarly appropriate for 50th Anniversary projects, for it was IGY funding that launched C.D. Keeling's classic research on the level of carbon dioxide in the atmosphere. With two years of measurements in the pristine air of Antarctica, where the US Navy had established a base for IGY research, Keeling demonstrated in 1960 that the level was ominously rising. (The full story may be found on the AIP History Center's Website at http://www.aip.org/history/climate/Kfunds.htm.)

Historians and geophysicists have been laying plans to commemorate the IGY with meeting sessions and other activities. An "IGY Gold" History initiative aims to identify and recognize participants in the first IGY and preserve memoirs, articles, photographs, and other items of historical significance for the IGY. Some oral history interviews will be conducted, for example, when people gather for meetings.

The American Geophysical Union's History of Geophysics Committee organized an "all union" session at the AGU's December 2006 meeting, "IGY +50: History, Significance, Context." The history committee plans to organize further sessions for the December 2007 meeting, and hopes to screen several of the original television films on the IGY that WGBH produced in the early 1960s. A main "IGY+50" celebration will be held July 2-4, 2007 in conjunction with the "General Assembly of the International Union of Geodesy and Geophysics" (IUGG) in Perugia, Italy. Some two dozen historians and IGY veterans will present talks and posters. The 50th Anniversary of the Space Age, commemorating the launching of Sputnik, will be the subject of a conference sponsored by the NASA history division and the Smithsonian Institution's National Air and Space Museum in Washington, D.C. on October 22-23, 2007 in conjunction with the 50th Anniversary meeting of the Society for the History of Technology. Also in Washington, on October 31-November 1, 2007 an international meeting of scholars, "Making Science Global: Reconsidering the Social and Intellectual Implications of the International Polar and Geophysical Years" to be held at the Smithsonian Institution.

Anyone aware of other IGY commemorative activities is invited to let us know, and we will post the information on the Web version of this article.

Brookhaven National Laboratory Records Management Program Preserves Historical Materials

by Corene Wood

n 2007, Brookhaven National Laboratory is celebrating 60 vears of discovery. Since its inception in 1947, the Lab has been home to six Nobel Prize-winning discoveries and countless other advances. One of ten national laboratories overseen and primarily funded by the Office of Science of the U.S. Department of Energy (DOE), Brookhaven National Laboratory conducts research in the physical, biomedical and environmental sciences, as well as in energy technologies and national security. Brookhaven Lab also builds and operates major scientific facilities available to university, industry and government researchers.

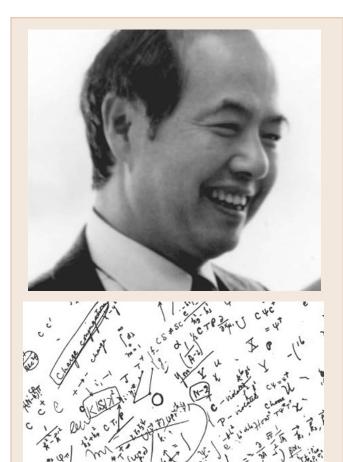
Brookhaven National Laboratory maintains a Records Management Program to ensure that the Laboratory's records are preserved, protected, and maintained, following rules laid out in the records schedules of the National Archives and Records Administration (NARA) and DOE. The Records Management Office, located in the Laboratory's Information Services Division, leads and coordinates the effort, and each BNL organizational unit designates one or more Records Representative(s). The Records Representatives are the first point of contact for staff on records matters.

The major elements of Brookhaven's Records Management Program include the institutional File Plan, the BNL Records Inventory, and a Vital Records Program. At the present time, the Laboratory manages its records at the records series level, using a commercial software system (Documentum's Records Manager). The Laboratory is presently evaluating software systems that will enable us to manage our electronic records at the document level in the future.

The Laboratory's records are preserved and protected until they reach the end of their assigned retention period. Records with a long retention period and permanent records, including those that are of historical significance, are transferred to a federal records center, which is managed by NARA. Records are reviewed at the end of their retention period to determine whether they are eligible for destruction.

Until recently, the Records Management Office maintained an onsite Records Holding Area, which was used to store inactive records. In 2006, the Laboratory contracted with Iron Mountain for records storage and the Records Management Office dispositioned approximately 6,000 cu. ft. of records for transfer to Iron Mountain or the Federal Records Center.

The Laboratory also contracts with Iron Mountain for the storage of its vital records. Through the "Vital Records Program," the laboratory has identified those records that would be needed to resume or continue critical operations in the event of an emergency, such as a fire or a natural disaster. To prepare for the possibility of such an event, the laboratory stores duplicate copies of its vital records at an offsite location. These records are updated



T.D. Lee used a doodle pad during talks with C.N. Yang, while both were visiting scientists at Brookhaven in the summer of 1956. These discussions led to questioning the conservation of parity in weak interactions and resulted in their being awarded the Nobel Prize in 1957. Courtesy Brookhaven National Laboratory

on a specified schedule to ensure that, if needed, our vital records will be accessible, up to date, and ready for use.

As the Laboratory celebrates its 60th Anniversary, the Records Management Program is focusing its efforts on the preservation of archival information. This includes documentary information which falls outside the definition of a record, but which is of historical interest. Some examples include the personal papers of renowned researchers, including those of some Nobel Prize winners. The Records Management team at Brookhaven has developed a preliminary inventory of archival material and space has been allocated for an archive, where these papers may be preserved, displayed, and made available for use by scholars. Next steps are to collect the material and have it evaluated by an archivist.

For information, contact Corene Wood, Sr. Staff Specialist, P.O. Box 5000, Building 477, Upton, NY 11973; wood@bnl. gov, or visit the laboratory's Website at www.bnl.gov.

AIP Adopts Policy on Preserving Journal Referee Files

by Joe Anderson

e're pleased to announce that the American Institute of Physics has adopted a policy (see below) on preserving referee files for the journals that it publishes and making them available to researchers 50 years from their date of creation. The policy also recommends that the AIP Member Societies follow the same procedures for journals that they publish on their own.

In September 2005, Daniel Kinnefink published "Einstein Versus the Physical Review" in *Physics Today* (online at http://ptonline.aip.org/journals/doc/PHTOAD-ft/vol_58/iss_9/43_1.shtml). The article, an impressive piece of scholarship, illustrates the rich information that referee records can provide, in this case regarding a disagreement between Physical Review editor John Tate and Einstein over a manuscript that the latter submitted in 1936. Because individual Physical Review referee reports for the 1930s no long exist, Kinnefink had to piece together incomplete, albeit persuasive, evidence from the journal's log books (thanks to editor Martin Blume the originals are now in the Niels Bohr Library & Archives) and from the papers of Howard Percy Robertson, who wrote the referee

report that led to the rejection of Einstein's original submission. Robertson's papers are available at the CalTech Archives.

In addition to tracing individual controversies like this one, Harry Marks, Associate Professor of History at Johns Hopkins, notes that "referee reports are an invaluable source of information about experimental practices and social networks..." He adds that "I cannot think of any comparable source as rich in information about tacit knowledge, the role of evidence and judgment, etc..."

The 50-year restriction is based on existing policies of the Nobel Foundation, the Royal Society, and a number of journals in other fields. The policy was drafted by the staff of AIP's Center for History of Physics and was revised and approved by the Institute's History Advisory Committee, Governing Board, and Publishing Policy Committee. AIP publishes approximately one-third of the world's journal literature in physics each year, and when implemented, this new policy will ensure a very valuable resource for researchers in the future. We hope that it may offer a model to other publishers as well.

AIP Policy on Preservation of Journal Referee Files

The American Institute of Physics recognizes that review files of leading journals represent an important resource for historians and other scholars. They provide unique insights into the state of science at the time they were written, and they often illustrate contemporary issues and controversies. The reviews for rejected manuscripts can be of special value. Accordingly, AIP adopts the following policy for its own journals and further recommends the policy for AIP Member Society journals.

(1) Journal publishers are responsible for preserving the historically valuable records of their journals when feasible and should arrange to place their peerreview files at an appropriate archive (e.g., their home institution archives, the Library of Congress). The AIP Niels Bohr Library & Archives is one appropriate repository for the records of AIP and AIP Member Society journals, but shortages of space and funds make it impossible for AIP to save any but the most historically valuable files of leading journals. Library and History Center staff will help journal editorial boards find other appropriate repositories for files that AIP cannot accept, or if they prefer another repository. The Center and Library will also provide help and advice in placing records of Member Society journals that are not published by AIP, but they do not have the resources to house these records in the Niels Bohr Library & Archives.

- (2) Review files should be access-restricted for a period of 50 years from the date of creation. A restriction of this length provides for the privacy of reviewers during their active careers, and it makes the files available to the scholarly community within a reasonable amount of time. It also reflects general archival practice. For AIP journals, the current Editor and AIP Executive Director, acting jointly, may provide access to qualified researchers before the 50-year time period expires, at their discretion. Similarly, the current Editor and appropriate Member Society official, acting jointly, may provide earlier access to Member Society journal records stored in AIP's archives. In any case, permission must be sought where feasible from relevant parties (referees, editors, authors) if still living. Data analysis without individual identification would be permitted, subject to all basic policy requirements, before the expiration of the 50 year restriction.
- (3) If resources permit, AIP further recommends that paper review files be digitized and/or microfilmed on an annual or other schedule to eliminate the need for permanently storing voluminous paper records. Materials already in digital format should be retained permanently by the appropriate repository if feasible. The AIP Center for History of Physics can provide advice on archival microfilming standards and on preserving digital files.

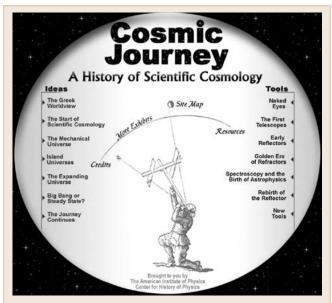
March 2007

New Web Exhibit Explores the **History of Cosmology**

new AIP History Center website tells with unprecedented depth, accuracy and excitement how scientists have explored the structure of the universe. "Cosmic Journey: A History of Scientific Cosmology" (http://www.aip.org/history/ cosmology/) is the newest of a dozen exhibits in the Center's "Exhibit Hall." "Cosmic Journey" is the largest of these exhibits, with more than 35,000 words and 380 illustrations.

The exhibit exploits the potential of web hypertext by mirroring the structure of science itself. The pages are arranged in two parallel columns, "Ideas of Cosmology" and "Tools of Cosmology." Readers could choose "Ideas" first, going down the

sequence of those pages, from the musings of Plato to current theories of the Big Bang. Or they could follow the "Tools" sequence from primitive navigational instruments to extraordinary astronomical satellites. Whereas some readers like to follow such a linear sequence, others prefer to explore along spontaneous paths, and these readers can follow links back and forth to discover, for example, how advances in telescope engineering led to better theories and how advances in theory spurred the development of new instruments. Readers can also step aside for vignettes on topics like "Women in Astronomy," "How Old is the Universe?" or "Computer Models."



The main page for the online exhibit on Cosmology: (http://www.aip.org/history/exhibits/cosmology)

The exhibit has many brief biographical side-pages on the tenacious, proud and often surprising scientists themselves. The topics are illustrated with old drawings, modern photographs and explanatory diagrams and animations. There is even a sound clip from a concerto composed by the great astronomer William Herschel, who began his career as a court musician. The "Ideas" section was written by Norris Hetherington and the "Tools" section by Patrick McCray, each a leading historian in his subject. Other experts generously reviewed the exhibit for accuracy. The editing and layout were supervised by Center Director Spencer Weart, who has produced all the other history of science exhibits on the AIP Center's web "Exhibit Hall" (http://www.aip.org/history/exhibits.html). This Website draws more than a million visitors a month, ranging from school children to retirees, from almost every country in the world. A textonly version of "Cosmic Journey" will be prepared for the sightimpaired. Because of the popularity and value of this Website, any item on it gets a good ranking in search algorithms; already a query on the terms "history cosmology" will find the new exhibit on the first page of leading search engines.

Recent Publications of Interest

Compiled by Babak Ashrafi

Kevin L. Cook writes about sending a balloon into the stratosphere in "Space Shot: 1935" in the Fall 2006 issue of American Heritage of Invention and Technology, Vol. 22, No. 2, 2006.

The American Journal of Physics has "Einstein and the existence of atoms" by Jeremy Bernstein in the October 2006 Vol. 74, No. 10 issue; "Revisiting the 1888 hertz experiment" by Daniele Faccio, Matteo Clerici and Davide Tambuchi as well as "The story of c" by Kenneth S. Mendelson in Vol. 74, No. 11.

Volume 63, No. 4, 2006 of Annals of Science has several interesting articles including "British Acoustics and its Trans-

> formation from the 1860s to the 1910s" by Ja Hyon Ku; "Edward Milne's influence on modern cosmology" by Thomas Lepeltier; and "Thermodynamic deduction versus quantum revolution: the failure of Richardson's theory of the photoelectric effect" by Shaul Katzir.

> Elizabeth Neswald writes about "Science, sociability and the improvement of Ireland: the galway mechanics' institute, 1826-51," and Nestor Nerran writes about "Spreading nucleonics: the isotope school at the atomic energy research establishment, 1951-67" in The British Journal for the History of Science, Vol. 39, 2006. In Volume 40, Suman Seth challenges conventional views with "Crisis and the construction of

modern theoretical physics," while Matthew Stanley offers "So simple a thing as a star: the eddington-jeans debate over astrophysical phenomenology"

Nobel laureate Chen Ning Yang talked to The CERN Courier about some of his early work, his impressions of the Large Hadron Collider and his thoughts about the future of physics in the Jan/Feb 2007 issue.

"Majorana: from atomic and molecular, to nuclear physics" by R. Pucci1 and G. G. N. Angilella appears in Foundations of Physics, Vol. 36, No. 10, 2006.

Historia Scientiarum, Vol. 16, No. 1, 2006, is a special issue on "Science and Technology during the Second World War and the Cold War: A Perspective for a Cooperative Study" and includes "A perspective on the historical study of science and technology during the second world war and the cold war in japan" by Hiroshi Ichikawa; "The Kaiser Wilhelm society during the second world war" by Helmut Maier; "Science sobilization in the Soviet Union" by Eduard I. Kolchinsky; and "American scientists and cold war politics: current and future research directions" by Jessica Wang.

Jaume Navarro examines "Imperial incursions in late-victorian cambridge: J. J. Thomson and the domains of the physical sciences" in **History of Science**, Vol. 44, part 4, No. 146, 2006.

"The invisible businessman: nuclear physics, patenting practices, and trading activities in the 1930s" by Simone Turchetti, in **Historical Studies in the Physical and Biological Sciences**, Vol. **37**, No. 1, 2007, is about Fermi and his group in Fascist Italy.

Volume **97** of **Isis**, 2006 contains Thomas L. Hankins, "A 'large and graceful sinuosity': John Herschel's graphical method" as well as W. Patrick McCray's "Amateur scientists, the international geophysical year, and the ambitions of Fred Whipple" and Mary Terrall's "Mathematics in narratives of geodetic expeditions."

Nicholas Kollerstrom writes about "John Herschel and the discovery of neptune," Kevin Johnson offers "A glimpse at the astronomy heritage of the science museum, London," Suzanne Débarbat and Françoise Launay examine "The 1874 transit of venus observed in Japan by the french, and associated relics," and David W. Hughes describes "The introduction of absolute magnitude (1902-1922)." These appear in **Journal of Astronomical History and Heritage**, Vol. **9**, No. 2, 2006.

"William Herschel and the prehistory of stellar spectroscopy" by Michael Hoskin and David W. Dewhirst is in Vol. **37**, part 4, No. 129, 2007, of the **Journal of the History of Astronomy.** "Frank Ross, his ross lens design, and the lick observatory 20-inch astrograph" by Donald E. Osterbrock appears in Vol. **38**, No. 130.

H. William Koch offers "Recollections on sixty years of NBS ionizing radiation programs for energetic x rays and electrons" in Vol. 111, No. 6, 2006, of Journal of Research of the National Institute of Standards and Technology, and Ted Doiron offers "20°C: a short history of the standard reference temperature for industrial dimensional measurements" in Vol. 112, No. 1, 2007.

Minerva has "Maintaining discipline in the Kaiser Wilhelm society during the national socialist regime" by Richard H. Beyler in Vol. **44**, No. 3, 2006, and "Science frustrated: the 'Einstein institute' in Madrid" by Thomas F. Glick and José M. Sanchez Ron in No. 4.

"Rethinking the history of solar wind studies: Eddington's analysis of comet morehouse" by Ian T. Durham appears in Vol. **60**, No. 3, 2006, of **Notes and Records of the Royal Society**. "Cromwell varley FRS, electrical discharge and victorian spiritualism" by Richard Noakes appears in Vol. **61**, No. 1, 2007.

Osiris Vol. 21, 2006 is about "Global power knowledge: science and technology in international affairs" and includes "Introduction: science, technology, and international affairs" by John Krige and Kai-Henrik Barth; "Negotiating global nuclearities: apartheid, decolonization, and the cold war in the making of the IAEA" by Gabrielle Hecht; "The ambivalence of nuclear histories" by Itty Abraham; "Prometheus unleashed: science as a diplomatic weapon in the Lyndon B. Johnson administration" by Ronald E. Doel and Kristine C. Harper; "The politics of noncooperation:

the boycott of the international centre for theoretical physics" by Alexis De Greiff; "Exporting MIT: science, technology, and nation-building in India and Iran" by Stuart W. Leslie and Robert Kargon;" 'An effective instrument of peace': scientific cooperation as an instrument of U.S. foreign policy, 1938-1950" by Clark A. Miller; "Atoms for peace, scientific internationalism, and scientific intelligence" by John Krige; "Catalysts of change: scientists as transnational arms control advocates in the 1980s" by Kai-Henrik Barth; "Hallowed lords of the sea: scientific authority and radioactive waste in the United States, Britain, and France" by Jacob Darwin Hamblin; and "Meteorology as infrastructural globalism" by Paul N. Edwards.

Physics in Perspective has "Enrico Fermi's discovery of neutron-induced artificial radioactivity: neutrons and neutron sources" by Francesco Guerra, Matteo Leone and Nadia Robotti, as well as "Physics in Madrid: where science competed with art" by José M. Sanchez-Ron in Vol. 8 No. 3, 2006. Number 4 of that volume contains "Paul A.M. Dirac's 'the principles of quantum mechanics'" by Laurie M. Brown as well as "Physics in Glasgow: a heritage tour" by Sean F. Johnston. Vol. 9, No. 1, 2007, includes "Guido Beck, Alexandre Proca, and the oporto theoretical physics seminar" by Augusto José dos Santos Fitas and António Augusto Passos Videira, and "Philipp Frank, Richard von Mises, and the frank-mises" by Reinhard Siegmund-Schultze. Finally, Kimball A. Milton offers "In appreciation Julian Schwinger: from nuclear physics and quantum electrodynamics to source theory and beyond."

Kameshwar Wali describes "The man behind bose statistics" in the October 2006 issue of **Physics Today.** The January 2007 issue includes a celebration of "The Bethe Ansatz after 75 years" by Murray T. Batchelor and a history of "The early says of pre-



Otto Stern (left) and Irving Langmuir in discussion during a conference at Como, Italy, circa 1927. AIP Emilio Segrè Visual Archives

cision laser spectroscopy" by Richard G. Brewer, Aram Mooradian, Boris P. Stoicheff. The February 2007 issue has Theodore A. Welton's "Memories of Feynman" and Steve K. Lamoreaux's "Casimir forces: still surprising after 60 years."

Carlo Cercignani examines "Ludwig Boltzmann: atomic genius" in the September 2006 issue of **Physics World**. In the December 2006 issue, Francis Everitt examines "James Clerk Maxwell: a force for physics."

"Einstein and Oppenheimer: interactions and intersections" in the context of Oppenheimer's and Einstein's relation to their Jewish roots, their stance regarding nationalism, and their philosophical commitments is Silvan S. Schweber's contribution in **Science in Context**, Vol. 19.

"The 'house that Dick built': Constructing the Team that Built the Bomb" by Denise N. Rall in Social **Studies of Science**, Vol. **36**, No. 6, 2006, is based on Richard Feynman's eyewitness account of computing at Los Alamos.

Studies In History and Philosophy of Modern Physics, Vol. 37, No. 4, 2006, includes "Philosophy enters the optics laboratory: Bell's theorem and its first experimental tests (1965-1982)" by Olival Freire, Jr.; "Symmetry and asymmetry in electrodynamics from Rowland to Einstein" by Giora Hona and Bernard R. Goldstein; and "Cosmologies with varying speed of light: a historical perspective" by Helge S. Kragh.

Documentation Preserved, Spring 2007

Compiled by Jennifer S. Sullivan

All the information here is entered in our online International Catalog of Sources for History of Physics and Allied Sciences. PLEASE NOTE: This column is published in its full extended form, as in previous years, as part of our online newsletter. Please see the latest issue online at www.aip.org/history/newsletter.html

Simon Fraser University. University Archives. Burnaby, British Columbia V5A 156 Canada.

Simon Fraser University, Faculty of Science records. Collection Dates: 1965-2000. Size: 8.26 metres. Some files

may contain personal or confidential information. Access to these files may be restricted as required by law.

Institut d'Estudis Catalans C. del Carme, 47. 08001 Barcelona, Spain.

Esteban Terradas papers. Collection Dates: circa 1901-1950. Size: 11.5 linear feet.

Athenaeum of Philadelphia. Architectural Archives. 2129 S. 6th Street, Philadelphia, PA 19106 USA.

Athenaeum of Philadelphia architectural materials on physics facilities. Collection Dates: 1892-1961. Size: 21 items (5 drawings, 14 blueprints, and 2 manuscript letters).



Well known art photographer Berenice Abbott photographed this Log Periodic Antenna (used for studies of refraction and scintillation of radio stars) at the Air Force Cambridge Research Laboratories, Sagamore Hill Radio Observatory, MA. She worked with Man Ray in Paris in the early 1920s before opening her own studio. She returned to the States in 1929 and in the late 1950s began to take photographs that illustrated the laws of physics. Photograph by Berenice Abbott, USAF Technial Photo Branch, courtesy AIP Emilio Segrè Visual Archives

California Institute of Technology. Institute Archives. 1201 East California Blvd. (Mail Code 015A-74), Pasadena, CA 91125 USA.

Frank Estabrook Papers. Collection Dates: 1969-1991. Size: 2 linear feet. Contact the repository for information about access.

Central Michigan University. Clarke Historical Library. Mount Pleasant, Michigan 48859 USA.

Wayne Osborn Papers. Collection Dates: 1959-2006. Size: 6.5 cubic feet (11 boxes).

Dartmouth College. Rauner Special Collections Library. Hanover, NH 03755 USA.

Arctic Seminar records. Collection Dates: 1953-1962. Size: 1.5 linear feet.

Dartmouth College Arctic Seminar papers. Collection Dates: 1953-1962. Size: 1.5 linear feet.

Gordon Harkness Gliddon papers. Collection Dates: 1941-1959 (bulk 1947-1957). Size: .5 linear feet.

Foresta Institute of Ocean and Mountain Studies. 6185 Franktown Road, Washoe Valley, NV 89704 USA.

Foresta Institute for Ocean and Mountain Studies records. Collection Dates: circa 1991-2001. Size: 30 cubic feet.



Robert R. Wilson on the phone. Taken on the occasion of the first 200 GeV beam passing through the Main Ring, making the National Accelerator Laboratory (NAL, re-named Fermi National Accelerator Laboratory in 1974) the world's highest-energy particle acceleratory laboratory, March 1, 1972. Fermi National Accelerator Laboratory, courtesy AIP Emilio Segrè Visual Archives

George Mason University. Special Collections & Archives. Fairfax, VA 22030-4444 USA.

Harold J. Morowitz manuscripts. Collection Dates: circa 1956-1993. Size: 3 cubic feet; 4.5 linear feet.

George Washington University. Department of Special Collections. University Archives. 2130 H Street, NW, Washington, DC 20052 USA.

George Washington University, Department of Physics records. Collection Dates: 1935-2000. Size: 33.25 linear feet. Contact archivist regarding access restrictions on collection.

Hansen Planetarium. 110 South 400 West, Salt Lake City, UT 84101 USA.

Hansen planetarium records. Collection Dates: 1964-2006. Size: 135 cubic feet, and 20 flat files. The collection is unprocessed.

Harvard University Archives. Pusey Library. Cambridge, MA 02138 USA.

Edward Purcell papers. Collection Dates: circa 1938-1997. Unprocessed, access may be restricted; contact repository.

Norman Ramsey papers. Collection Dates: circa 1945-1990. Unprocessed, access may be restricted; contact repository.

Samuel Williams papers. Collection Dates: 1780-1791. Size: 6 volumes. Access may be restricted. Details at the repository.

Chauncey Wright papers. Collection Dates: 1852. Size: 1 folder. Access may be restricted. Details at the repository.

Harvard University. Francis A. Countway Library of Medicine. Harvard Medical School. Rare Books Dept. 10 Shattuck St., Boston, MA 02115 USA. **A. Baird Hastings papers.** Collection Dates: circa 1927-1957. Size: 7 file drawers.

Harvard University. Historical Scientific Instruments Collection. Science Center B-06. Cambridge, MA 02138 USA.

William Bond & Son records. Collection Dates: 1763-1921. Size: circa 4 cubic feet (1 box and 7 volumes).

Harvard University. Houghton Library. Cambridge, MA 02138 USA.

John F. W. Herschel papers. Collection Dates: 1810-1917. Size: 3 linear feet.

William Herschel astronomical papers. Collection Dates: 1796-1805. Size: 0.5 linear feet

William Herschel papers. Collection Dates: 1780-1822. Size: 1 linear foot.

Historical Society of Pennsylvania. 1300 Locust Street, Philadelphia, PA 19107 USA.

Wister, Miercken, and Whiteside family papers. Collection Dates: 1777-1890. Size: 620 items.

Indiana University. Office of University Archives and Records Management. Bryan Hall 201, 107 South Indiana Avenue, Bloomington, IN 47405 USA.

Goethe Link Observatory Director's records. Collection Dates: 1935-1941. Size: 0.8 cubic feet.

Mason E. Hufford papers. Collection Dates: 1853-1952. Size: 2 cubic feet. Please see the photographs curator for access to the lantern slides and lithograph plates series.

Daniel Kirkwood papers. Collection Dates: 1864-1895. Size: 0.4 cubic feet.

Kenneth P. Williams papers. Collection Dates: 1772-1963. Size: 5.4 cubic feet.

Iowa State University. Special Collections Department and University Archives. 403 Parks Library, Ames, IA 50011-2140 USA.

Raymond M. Hughes papers. Collection Dates: 1923-1972. Size: 7.56 linear feet (6 document boxes).

Louis Bevier Spinney papers. Collection Dates: 1891-1951. Size: 0.84 linear feet (2 document boxes).

Robert M. Stewart papers. Collection Dates: 1930-1988. Size: 1.26 linear feet (3 document boxes).

Wilbur Collins Thoburn papers. Collection Dates: 1945-1992. Size: 0.42 linear feet (1 document boxes).

Iowa State University. Parks Library. Archives of Women in Science and Engineering. 403 Parks Library, Ames, Iowa 50011-2140 USA.

Professional Women in ANS (American Nuclear Society) Committee records. Collection Dates: 1978-1994. Size: 0.5 linear feet (4 folders).

Johns Hopkins University. Special Collections. Milton S. Eisenhower Library. 3400 N. Charles St., Baltimore, MD 21218 USA.

Henry Augustus Rowland collection of reprints. Collection Dates: 1793-1900. Size: 12.5 linear feet (10 boxes).

Cleveland Abbe papers. Collection Dates: 1851-1952. Size: 4.4 linear feet (9 document boxes and 3 flat boxes).

Richard Threlkeld Cox papers. Collection Dates: 1958-1972. Size: 0.5 linear feet.

Albert Lee Grauer notebooks. Collection Dates: 1904-1907. Size: 5 volumes.

Charles Lane Poor papers. Collection Dates: 1898-1945. Size: 4.6 linear feet (11 document boxes).

Harry Fielding Reid papers. Collection Dates: 1894-1944. Size: 3.35 linear feet (6 boxes).

Library of Congress. Manuscript Division. James Madison Memorial Building. First Street and Independence Avenue, SE, Washington, DC 20540 USA.

Wallace R. Brode papers. Collection Dates: 1901-1974. Size: 8750 items; 25 containers plus 1 classified; 10 linear feet. Classified, in part.

Alan Shapley papers. Collection Dates: circa 1950s. Size: 80 containers.

Massachusetts Institute of Technology. Institute Archives and Special Collections. M.I.T. Libraries, Room 14N-118, Cambridge, MA 02139 USA.

Joe Stearns Clark papers. Collection Dates: 1949. Size: 0.1 cubic feet (1 folder).

Leonard Parker Cohen student notes. Collection Dates: 1934. Size: 0.1 cubic feet (1 folder).

Charles Stark Draper oral history collection. Collection Dates: 1976. Size: 0.3 cubic feet (6 cassettes). There are restrictions on access to portions of this collection. Researchers may request permission to use restricted materials. Consult the Institute Archivist for further information.

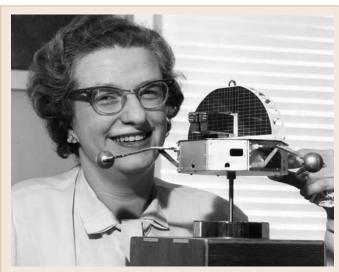
Roy Kaplow papers. Collection Dates: 1963-1981. Size: 0.3 cubic feet (1 manuscript box).

Richard C. Lord papers. Collection Dates: 1946-1981. Size: 32 cubic feet (32 records cartons).

Massachusetts Institute of Technology Department of Physics curriculum materials. Collection Dates: 1874-1917. Size: 0.7 cubic feet (2 manuscript boxes).

Massachusetts Institute of Technology Research Laboratory of Electronics records. Collection Dates: 1944-2000. Size: 8.2 cubic feet (3 records cartons, 14 manuscript boxes, and 3 half manuscript boxes). In accordance with MIT policy, there are restrictions on access to portions of this collection. Researchers may request permission to use restricted materials. Consult the Institute Archives for further information. Retrieval requires advance notice.

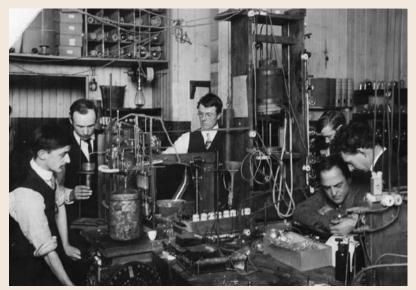
Arthur Fleming Nesbit papers. Collection Dates: circa 1895. Size: 0.2 cubic feet (1 small manuscript box).



Nancy Roman with a model of the Orbiting Solar Oberservatory (OSO), circa 1963. NASA photo, courtesy AIP Emilio Segrè Visual Archives, Roman Collection



Adelaide Ames, Arlow Shapley's assistant at Harvard College Obserservatory from 1924-1932. She was co-author of the Shapely-Ames catalogue of bright galaxies. Newspapers report she was "lost by drowning" in 1932. AIP Emilio Segrè Visual Archives, Shapley Collection



L-R: J. A. Orange, Leonard D. Dempster, Irving Langmuir, George Hotaling, Willis Rodney Whitney, and William David Coolidge at General Electric Research Laboratory, ca 1912. General Electric Research Laboratory, courtesy AIP Emilio Segrè Visual Archives, Hecht Collection

John T. Norton papers. Collection Dates: 1936-1966. Size: 0.7 cubic feet (2 manuscript boxes). There are restrictions on access to this collection. Researchers may request permission to use restricted materials. Consult the Institute Archivist for further information

David J. Rose papers. Collection Dates: 1949-1984. Size: 22 cubic feet (22 records cartons). There are restrictions on access to this collection. Researchers may request permission to use restricted materials. Consult the Institute Archivist for further information.

David S. Saxon papers. Collection Dates: 1969-1991. Size: 5.3 cubic feet (5 records cartons, 1 manuscript box, and 2 audio tapes). In accordance with MIT policy, there are restrictions on access to portions of this collection. Researchers may request permission to use restricted materials. Consult the Institute Archivist for further information.

B. E. Warren papers. Collection Dates: 1926-1978. Size: 0.5 cubic feet (2 boxes).

Michigan State University. University Archives and Historical Collections. East Lansing, MI 48824-1327 USA.

Michigan State University. Department of Astronomy and Astrophysics annual reports. Collection Dates: 1967-1969. Size: 3 folders.

Michigan State University. Department of Biophysics records. Collection Dates: 1962-1968. Size: 1 folder.

Minnesota Historical Society. Division of Archives and Manuscripts. 345 W. Kellogg Blvd., St. Paul, MN 55102, USA.

Arvid Reuterdahl papers. Collection Dates: undated, 1902-1944. Size: 10 items.

Pennsylvania State University. Libraries. Special Collections Division. University Park, PA 16802 USA.

Pennsylvania State University. College of Science records. Collection Dates: 1884-1971. Size: 12.25 cubic feet.

Harold Kistler Schilling papers. Collection Dates: 1934-1973. Size: 2.5 cubic feet.

State University of New York at Buffalo. University Archives. 420 Capen Hall, Amherst Campus, Buffalo, New York 14260 USA.

Gregory Breit personnel folder. Collection Dates: 1968-1973. Size: 1.2 linear feet. Permission required; consult archivist at the repository.

Moti Lal Rustgi papers. Collection Dates: 1951-1992. Size: 40 boxes (18 linear feet). The bulk of this collection is open for research; contact the repository for details.

Western New York Nuclear Research Center history files. Collection Dates: 1953-1970. Size: 5 boxes (4.5 linear feet).

Western New York Nuclear Research Center records. Collection Dates: circa 1959-1998. Size: 10 manuscript boxes plus 2 half boxes (5.5 linear feet total).

Tufts University. Tisch Library. Archives and Special Collections. Medford, MA 02155 USA.

Allan Cormack papers. Collection Dates: 1909-1997. Size: 10.5 linear feet. Some records may be restricted. Please contact the repository for details.

University of California, Berkeley. The Bancroft Library. Berkeley, CA 94620-6000 USA.

Raymond Thayer Birge correspondence relating to Oppenheimer hearings. Collection Dates: circa 1928-1954. Size: 1 box.

Robert Bigham Brode papers. Collection Dates: circa 1930-1959. Size: 9 cartons. Unarranged collection; unavailable for use. Inquiries regarding these materials should be directed, in writing, to the Head of Public Services, The Bancroft Library.

Geoffrey F. Chew papers. Collection Dates: circa 1921-1991. Size: 2 cartons (2.5 linear feet). Collection stored offsite; advance notice required for use.

Leland Cunningham papers. Collection Dates: circa 1916-1970. Size: 44 cartons (55 linear feet). Unarranged collection; consult the University Archivist regarding use. Collection stored off-site; advance notice required for use.

Gerson Goldhaber papers. Collection Dates: 1949-1991. Size: 33 cartons, 2 boxes (42.05 linear feet). Collection stored off-site; advance notice required for use.

A. Carl Helmholz papers. Collection Dates: circa 1945-1981. Size: 2 cartons (2.5 linear feet). Collection stored offsite; advance notice required for use.

Arthur F. Kip papers. Collection Dates: circa 1933-1978. Size: 9 cartons (11.25 linear feet). Collection stored off-site; advance notice required for use.

Margaret Kivelson oral history interview. Collection Dates: 1988-1992. Size: 2 volumes: (xv, 380, vii, 381-760 pages): 28 cm.

John H. Reynolds papers. Collection Dates: 1949-1998. Size: 11 cartons (13.75 linear feet). Collection stored off-site; advance notice required for use.

Cornelius A. Tobias oral history interviews and supplementary material. Collection Dates: 1979-2000. Size: 1 box (0.4 linear feet) and 30 sound cassettes.

Charles H. Townes papers. Collection Dates: circa 1950-1977. Size: 5 cartons (6.25 linear feet). Preliminary arrangement; consult University Archivist regarding access. Collection stored off-site; advance notice required for use.

William Chinowsky papers. Collection Dates: circa 1970-1992. Size: 3 cartons (3.75 linear feet). Collection stored offsite; advance notice required for use.

John Hundale Lawrence papers. Collection Dates: 1935-1987. Size: 12.25 linear feet (9 cartons, 2 boxes, and 12 microfilm reels).

John A. McCone papers. Collection Dates: 1904-1991. Size: 35 cartons, 8 boxes, 4 oversize boxes, 8 volumes and 4 oversize folders.

Charles L. Schwartz papers. Collection Dates: 1968-1995. Size: 52 cartons, 2 oversize folders (65.1 linear feet). Unarranged collection; unavailable for use. Inquiries regarding these materials should be directed, in writing, to the Head of Public Services, The Bancroft Library.

Samuel Silver papers. Collection Dates: bulk 1933-1976. Size: 17 cartons and 20 boxes.

Course notes of lectures by George Louis Le Sage. Collection Dates: 19th century. Size: 3 folders in 1 portfolio (378 pages). **Luis W. Alvarez bubble chamber logs.** Collection Dates: 1956-1970. Size: 36 volumes (4 linear feet).

Ruggero Boscovich scientific lectures given at the Collegio RomaNo. Collection Dates: 1758-1759. Size: 1 volume.

Collection of biographical materials on Ernest O. Lawrence. Collection Dates: 1960-1968. Size: 4.9 linear feet (6 boxes).

P. Gerald Kruger letters to Erika Wackenroder Kruger. Collection Dates: 1939-1940. Size: 1 box (0.2 linear feet).

Sophia Levy McDonald miscellany. Collection Dates: 1942-1945. Size: 1 portfolio (0.1 linear feet)

Bernard Peters course notes for J. Robert Oppenheimer's Physics 221 (quantum mechanics). Collection Dates: 1939. Size: 1 volume.

Wendell Prescott Roop correspondence. Collection Dates: 1907-1928. Size: 1 box (0.2 linear feet).

Bernard G. Saunders papers. Collection Dates: circa 1940-1970. Size: 1 carton (1.25 linear feet).

David Harold Sloan papers. Collection Dates: 1925-1983. Size: 1 box (0.4 linear feet).

Robert H. Weitbrecht papers. Size: 10 cartons. Inquiries regarding these materials should be directed, in writing, to the Head of the Manuscripts Division.

University of California, Los Angeles. University Research Library. Department of Special Collections. Los Angeles, CA 90024 USA.

David S. Saxon oral history interview. Collection Date: 1994. Size: 3 volumes (1052 pages).

Louis B. Slichter oral history interview. Collection Dates: 1976, 1977 and 1978. Size: 185 pages.

Yuan T. Lee papers. Collection Dates: circa 1964-1993. Size: 10 cartons, 1 box (12.9 linear feet). Portions of this collection are restricted; permission of the University Archivist required for access. Collection stored off-site; advance notice required for use.

Nobel laureate: an oral history interview with Willard F. Libby. Collection Dates: 1978. Size: Sound recording: 5.5 hours. Transcript: ix, 171 pages: port.; 28 cm. Audiotapes are accessible by special arrangement only. Contact the repository for details.

By unrolling before [the physics student] the continuous tradition through which the science of each epoch is nourished by the systems of past centuries, through which it is pregnant with the physics of the future; by mentioning to him the predictions that theory has formulated and experiment realized; ... [history] fortifies in him the conviction that physical theory is not merely an artificial system, suitable today and useless tomorrow, but that it is... an increasingly more clear reflection of realities.

--Pierre Duhem

University of Kansas. Libraries. Kenneth Spencer Research Library. University Archives. Lawrence, KS 66045 USA.

Robert J. Friauf papers. Collection Dates: 1953-1994. Size: 22 linear feet.

University of Maryland. Hornbake Library. Archives and Manuscripts Department. College Park, MD 20742 USA.

Stephen G. Brush papers. Collection Dates: 1888-2006. Size: 10.5 linear feet. Some papers are restricted, including letters of recommendation and referee reviews of papers submitted to journals.

University of Michigan. Bentley Historical Library. Ann Arbor, MI 48109-2113 USA.

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William Walker volume of celestial observations. Collection Dates: 1796-1799. Size: 1 volume.

University of Minnesota Libraries. Manuscripts Division. Literary Manuscripts Collections. Andersen Library, Minneapolis, MN 55455 USA. William D. Morgan papers. Collection Dates: 1820, 1921-1963. Size: 1 cubic foot.

University of Minnesota Libraries. University Archives. Andersen Library, Minneapolis, MN 55455 USA.

Edward L. Hill papers. Collection Dates: 1928-1973. Size: 1 linear foot (2 boxes).

Aneesur Rahman papers. Collection Dates: 1970s-1980s. Size: 9.1 linear feet (7 boxes).

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University of Minnesota Department of Physics papers. Collection Dates: 1886-1972. Size: 5.2 linear feet (4 boxes).

University of New Hampshire. Dimond Library. Special Collections. Archives. Durham, NH 03824-3592, USA.

Arthur S. Adams papers. Collection Dates: 1948-1950. Size: 28 boxes.

Arthur F. Nesbit papers. Collection Dates: 1895-1903 and undated. Size: 2 boxes.

University of Pittsburgh. University Library System. Archives Service Center. 7500 Thomas Boulevard, Pittsburgh, PA 15208 USA.

Richard Pratt papers. Collection Dates: 1820-2005. Size: 32.76 cubic feet (78 boxes).

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Otto von Guericke's electric machine, from the book The Forces of Nature: A Popular Introduction to the Study of Physical Phenomena. by Amedee Guillernin, translated from the French by Mrs. Norman Lockyer, and edited with additions and notes by J. Norman Lockyer, F.R.S., 2nd Edition, published by Scribner, Welford and Armstrong, New York, 1873. AIP Emilio Segrè Visual Archives, Brittle Books

open for research with the following exceptions: Letters of recommendation and some individual files in the general correspondence series are closed. Research access to material in the teaching series and to some files in the correspondence series is restricted; requests are subject to individual review by curator. Please contact the Archives of Scientific Philosophy for additional information.

Amateur Astronomers Association of Pittsburgh records. Collection Dates: 1931-2002. Size: 6.875 linear feet.

University of Rhode Island. University Libraries. Special Collections. University Archives. 15 Lippitt Road, Kingston, RI 02881-2011 USA.

University of Rhode Island Graduate School of Oceanography oral history interviews. Collection Dates: 15 July - 23 July 1999. Size: 1 box of 7 digital videocassettes (0.25 linear feet).

University of Rhode Island Graduate School of Oceanography records. Collection Dates: 1935-1998. Size: 138.5 linear feet (277 boxes).

University of Texas at Austin. Center for American History. Archives of American Mathematics. Austin, TX 78713 USA.

Collection on the mechanical harmonic synthesizer and multiharmonograph. Collection Dates: 1939-1948 and undated. Size: 2 inches. Collection stored offsite at the Collections Deposit Library. Please allow 48 hours for retrieval.

University of Washington Libraries. University Archives. Mailstop #0-10. Seattle, WA 98195 USA.

American Astronomical Society correspondence. Collection Dates: 1981-2004. Size: 22 cubic feet (22 boxes). Access may be restricted; contact repository for details.

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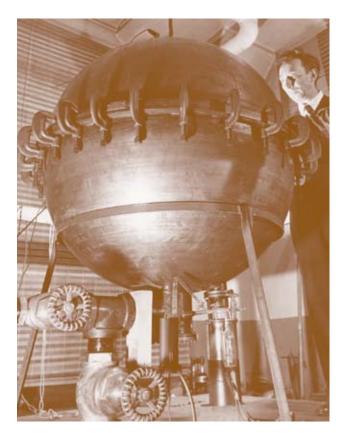
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University of Washington Nuclear Physics Laboratory records. Collection Dates: 1949-1995. Size: circa 15.88 cubic feet. Access may be restricted; contact repository for details.

Virginia Polytechnic Institute and State University. Carol M. Newman Library. Special Collections Department. P. O. Box 90001, Blacksburg, VA 24062-9001 USA.

George Collins papers. Collection Dates: 1960-1969 and undated. Size: 2.0 cubic feet.

Nuclear Pioneers: Conference on Nuclear Developments videotapes and papers. Collection Dates: 1991. Size: 0.5 cubic feet.



The large metallic shpere, which Clarence Hewlett is standing beside, was used for evaporating materials, such as selenium, onto blanks in high vacuum at General Electric Research Laboratory in Schenectady, NY. AIP Emilio Segrè Visual Archives

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[&]quot;We live today in a world in which poets and historians and men of affairs are proud that they wouldn't even begin to consider thinking about learning anything of science, regarding it as the far end of a tunnel too long for any wise man to put his head into."

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The Center's Development Committee is in the process of contacting more institutions to see if they would like to join this partnership. If you would like more information about this program, or if you would like to help out in contacting institutions (which the CHP makes quite painless) please contact Dan Kleppner (kleppner@mit.edu) or John Rigden (jrigden@aip.org). If you are an academic institution and are interested in learning more about this partnership, please send an email to historyfriends@aip.org or call 301-209-3006.

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David Hilbert (left) and James Franck stop to discuss physics, circa 1926 AIP Emilio Segrè Visual Archives, Franck Collection

Mark N. McDermott (1930 - 2006), who served on the University of Washington physics faculty for more than 40 years, died on November 4, 2006 from complications related to ALS (amyotrophic lateral sclerosis). An atomic physicist who contributed to the understanding of the electrical and magnetic properties of certain nuclei, Prof. McDermott was recognized for his distinguished career of service to his department, the university, and the physics com-



munity. One of his legacies is the Physics and Astronomy Building, which was planned and constructed during the ten years that he was department chair. His deep interest in the history of physics led to his membership on the Friends of the Center for History of Physics Development Committee, where he was instrumental in launching the Center's first fund-raising campaign: History that Matters. Please visit our tribute to Mark, who was a member of our Legacy Circle, at www.aip.org/history/historymatters.htm.

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Announcing the Marc H. Brodsky Fund for Oral History of Physicists in Industry

"It is my pleasure to announce the new Marc H. Brodsky Fund for Oral History of Physicists in Industry," said Fred Dylla, incoming Executive Director and CEO of the American Institute of Physics. Spontaneous applause greeted this surprise announcement at the March 29th gala farewell dinner honoring Marc Brodsky's exemplary 14 years of service as AIP's Executive Director and CEO. "We give our great thanks to the benefactors for this Fund honoring Marc's distinguished career," Fred continued. "Please join me in thanking the Lois and Julian Brodsky Family for their initial generous pledge and concept for the Fund, and John and Elizabeth Armstrong, for their generous gift to establish this as a permanently restricted endowment for the Center for History of Physics." Fred also thanked AVS: Science & Technology of Materials, Interfaces, and Processing, William Brinkman, Robert Doering and Texas Instruments, Morrell Cohen, Bruce Curran, Millie Dresselhaus, Roderick Grant, Mark B. Ketchen, Daniel Kleppner, James McGroddy, Richard Meserve, Stanford Ovshinsky, Roland Schmitt, Trey Smith and SAIC, and James Stith who were other lead donors to the Fund.

This permanently restricted endowment will enable the American Institute of Physics, Center for History of Physics and Niels Bohr Library & Archives to interview several important industrial physicists each year, transcribe and preserve their oral histories, and make them available to researchers now and in the future.

Lois and Julian Brodsky initiated the Fund through a generous gift of \$50,000. Julian, Marc's brother, is a founder, Director and Vice Chairman of Comcast Corporation. The gift recognizes Marc's past work as an industrial physicist, and also is a memento of Julian's personal experience of the value of oral histories both in his company's archival efforts, and in creating a history of the cable television industry. "In 1991 a fire at my company destroyed our records, and in recreating them, we conducted several oral histories of key personnel." Julian further comments, "Recognizing Marc through this Fund is very appropriate because of his stellar reputation in the industrial physics world as well as his work at AIP. The Fund honors both aspects of Marc's career."

The Fund comes at a critical time. Very little has been done to document the history of physicists in industry, and even less is currently being done to preserve the recollections of the many unsung heroes who are responsible for many beneficial technologies. Under Marc Brodsky's leadership, AIP is conducting a pioneering project to document the History of Physicists in Industry to conclude at the end of 2007. The Marc H. Brodsky Fund for Oral History will help us to continue this work in perpetuity.

With the addition of this new Fund, the current endowment for physicists in industry is about \$150,000, providing only a fraction of what is needed to preserve the broad history of industrial physics. If you wish to help preserve this history, please donate online at www.aip.org/helphistory, or contact the AIP Development Office at 301-209-3141.



From left to right: Lois and Julian Brodsky, Fred Dylla, Marc and Vivian Brodsky

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