



Henry Anton Erikson demonstrating the properties of liquid air in his Department of Physics lecture room, University of Minnesota, about 1926. Photo courtesy AIP Emilio Segrè Visual Archives, gift of Susan Kilbride.

Grants-in-Aid Serve Variety of Purposes

Thanks to the generosity of our Friends, the Center is able to give grants-in-aid of up to \$2000 (the amount has varied from year to year) to help reimburse expenses for visiting the Niels Bohr Library, conducting oral history interviews and the like (see www.aip.org/history/web-grnt.htm). We were recently pleased and surprised to get a letter from one of the former recipients:

“Three years ago,” writes Lambert Williams (a doctoral candidate at Harvard currently visiting the Max Planck Institute for the History of Science), “while still a Master’s student at New York University, I was the recipient of a grant-in-aid from the History Center of the AIP. It was only very recently, while sorting through some old papers, that I was reminded of the request

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Major Changes and Progress in the Project to Document the History of Physicists in Industry (HoPI)

Some of the highlights of our continuing study of industrial physicists during the last year include:

- The grant-funded project has been extended to the end of 2007.
- Orville Butler, an experienced PhD historian of science/business, was hired to replace Tom Lassman who left to accept a career track position.
- Staff held site visits at major German industrial archives.
- A candidates list for longer oral history interviews is being developed.
- Oral history interviews were conducted with 3 major industrial physicists.
- All 59 interviews with physicists and R&D managers are transcribed and edited.
- We’re well into analysis of the transcripts, using NVivo topical-indexing software.

By last fall we had completed site visits at the central R&D laboratories at IBM, Corning, GE, Lucent, Xerox, 3M, Exxon Mobil, Kodak, and Texas Instruments—nine of the fifteen companies targeted in the study—and had conducted question-set interviews with 54 corporate physicists and science managers and 19 technical librarians, records managers, or archivists employed by the companies. Thus we were well ahead of schedule in laboratory site visits and question-set interviews, but as a result we had fallen behind in editing and analyzing the interviews.

We also had gathered enough information to focus more attention on longer career-length interviews with selected leaders in industrial physics, while continuing site visits at archives that collect and preserve industrial records, both here and abroad. In addition we also realized that the overall project would require more time than we had originally expected (particularly with the loss of a key staff member). Thanks to additional funding from the Avenir Foundation, one of the five organizations supporting the study, we have been able to extend our work through December 2007. We have shifted our focus over the past year, concentrating on 1) transcribing, editing, and analyzing all the interviews that we’ve completed; 2) initiating what we hope will become a permanent new program to identify and interview especially influential

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that feedback be given once the grant has expired.... My particular grant was awarded for what was then very early-stage research on Felix Bloch's 'experimental turn' upon emigrating to the US, and on one or two related issues in solid state physics between 1927 and the 1950's. At the time the award was made, I was in the very earliest days of rethinking my trajectory, moving from a background strictly in philosophy and logic to work of a far more historical flavor.

"... I did not use the full amount of my grant, but the part that I did use resulted firstly in a talk that was well received at two professional conferences. More importantly, though, the upshot of my research on Bloch was to decide to pursue a PhD in the history of science... using my findings on Bloch as a writing sample ultimately helped me to secure a place at Harvard in Fall 2002.

"Since that time, the focus of my work has changed slightly (the dissertation project deals with the Sciences of Chaos and Complexity post 1960) but there are of course still substantial points of contact with solid state/condensed matter work.... This both required and will require a familiarity with basic concepts and

archival materials I would not have had without the support of the AIP History Center.

"My work on Bloch... has unquestionably served as a springboard to places that back then seemed inconceivable... my warmest thanks for your support."

Our Grants-in-aid have not only helped launch careers, but are prized by postdoctoral students and both junior and senior historians from less-wealthy countries. For such scholars, a level of support that is small by most standards can make all the difference.

In the November 2004 and May 2005 rounds, grants-in-aid were awarded to: Joseph Bassi for research on the solar-terrestrial (Sun-Earth) connection; Peter Bryne for research on Hugh Everett and his interpretation of quantum mechanics; Martha Harris for research on the chemical bond and the growth of chemical physics in the 1920s and 30s; Arne Herndon & Thomas William for an oral history interview of Dorrit Hoffleit; Maria V. Mokra for research on Soviet-American contacts in physics, and Doogab Yi for research on biophysics and the discovery of DNA repair in postwar America — he has already sent us his oral history interviews with Richard B. Setlow and Harold J. Morowitz.

APS Historic Sites Committee Designates Five Key Physics Sites

by John S. Rigden

The Historic Sites Committee of the American Physical Society (see this *Newsletter*, Fall 2004, www.aip.org/history/newsletter/fall2004/historic-physics.htm) has selected the first five sites to be entered into to the APS Register of Historic Sites. These sites are the *Franklin Institute in Philadelphia* in recognition of Benjamin Franklin's pioneering work in electricity, *The Johns Hopkins University* where Henry Rowland revolutionized spectroscopy with his ruled gratings, *Case-Western Reserve*, the site of the *Michelson-Morley* experiment, *Washington University in St. Louis* where Arthur Compton did his famous X-ray scattering experiment, and *Yale University* where J. Willard Gibbs made fundamental contributions to thermodynamics. A plaque will be presented to each of these institutions. It will contain a brief citation followed by these words: "Historic Physics Site, Register of Historic Sites American Physical Society." The first plaque was presented to the Franklin Institute on July 13, 2005.

The members of the Historic Sites Committee are Gordon Baym, University of Illinois; Mildred Dresselhaus, MIT; Sidney Drell, Stanford; Gerald Holton, Harvard; and John Rigden, Washington University in St. Louis. The commit-



Presenting the Historic Physics Site plaque at the Franklin Institute. L to R: John Rigden, Bo Hammer, Alan Chodos.

tee expects to name additional sites later in 2005. A Web site is being developed which will give instructions for nominating sites for the APS Register and will feature those sites named to the register. The purpose of this APS initiative is to bring physics to the general public and raise awareness of the importance of physics in the general culture.

corporate physicists; and 3) conducting site visits at major industrial archives in Germany. In June, project historian Tom Lassman left AIP to accept a civil service-track position with the U.S. Army History Office, and we have been fortunate in recruiting Orville Butler, an experienced science and business historian who has also had experience as archivist for Maytag, to fill the position, joining us in mid-September.

All the completed interviews are now transcribed and edited, and we're currently analyzing them using a qualitative sociological software program called NVivo. In April, project director Joe Anderson presented an interim report on the project (online at www.bath.ac.uk/ncuacs/FP2_Anderson.htm), based in part on an initial analysis of the interviews and other sources, at a conference of science archivists at the Deutsches Museum in Munich. While our findings at this point are still tentative and based on a partial analysis, we have acquired a general sense of the varieties of structure and funding of current corporate research and the kinds of records that are created. We will test these observations as we proceed with more lab site visits and a rigorous analysis of the interviews and other sources during the remainder of the project and then prepare our guidelines and recommendations for identifying and preserving historically valuable R&D records.

While in Germany, Anderson conducted site visits at representative archives that form a remarkable safety net for preserving significant industrial records there. The repositories visited were the Deutsches Museum Archives, a major institution that accepts orphaned business records; the in-house archives of the Siemens and Carl Zeiss companies; and the chambers of commerce and industry archives in Cologne and Munich. While a significant number of German businesses support their own archives, the chambers of commerce and industry in six of the eleven German Landes preserve records of a broad cross-section of other companies.

We also began work in late 2004 on career-length oral histories with selected corporate physicists who have had a major impact on US corporate research or research policy. We've contacted more than 30 distinguished corporate scientists and historians to develop, with their advice, a list of potential interview candidates. So far we have completed five of the longer interviews and have sufficient funds to conduct a total of 15 or more during the project. When the study is completed we'll

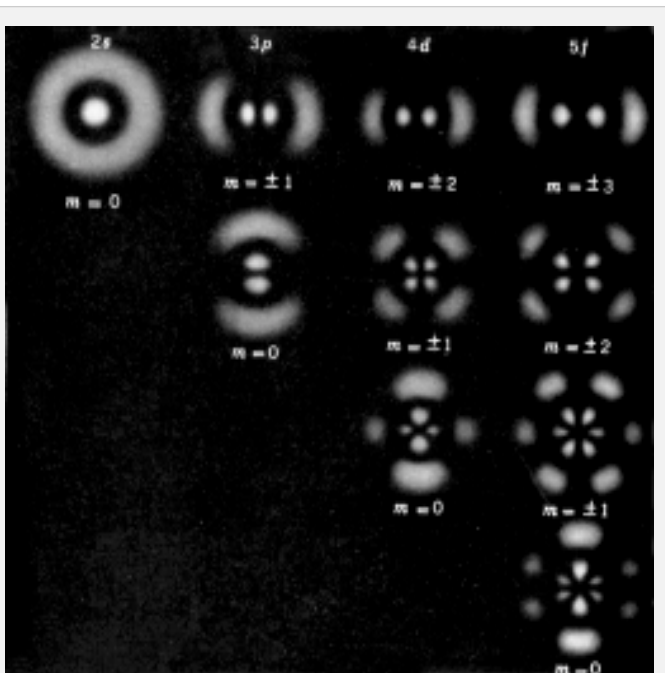
continue to tape-record interviews of leading industrial physicists as funds permit. Because career-length oral histories are expensive to conduct—with hours of research and editing before and after the actual interview, which typically runs from four to ten hours—we have begun an Industrial Physics Endowment Campaign to support this and related work to preserve the history of physicists in industry (for the Campaign see page 25 of this Newsletter ...OR... see our Spring 2005 Newsletter at www.aip.org/history/newsletter/spring2005/industry.htm).

The HoPI study is continuing to make good progress, and we've created a better mix of all the varied project activities over the last year. We are currently scheduling our next laboratory site visits and additional career-length interviews, as well as continuing to analyze the interviews already in hand.



Joe Anderson and Carl Zeiss Archiv director Dr. Wolfgang Wimmer review Zeiss R&D records.

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A photographic representation of probability of electron densities in various "orbitals" (energy eigenstates), from Robert Leighton, Principles of Modern Physics (MGrav-Hill, 1959, p. 179), an especially fine copy donated recently to the Niels Bohr Library by Martin Klein. Leighton was not the first to make such a representation but his widely-used textbook exposed it to millions of physicists.

The NOAA Central Library: A Resource for Historians and Scientists

by Albert E. Theberge, Jr.

The National Oceanic and Atmospheric Administration (NOAA) Library System is a federation of over thirty libraries dedicated to earth, atmospheric, and environmental sciences. Total collections encompass over 3 million documents spanning five centuries, all continents and oceanic regions, and subject matter ranging from the surface of the sun to the bottom of the sea. The flagship library of this system is the NOAA Central Library in Silver Spring, Maryland.

The Central Library dates to 1811, when Ferdinand Hassler, founder of the Coast Survey, traveled to Europe to procure books and instruments for America's first physical science agency. The Coast Survey Library grew around a nucleus of

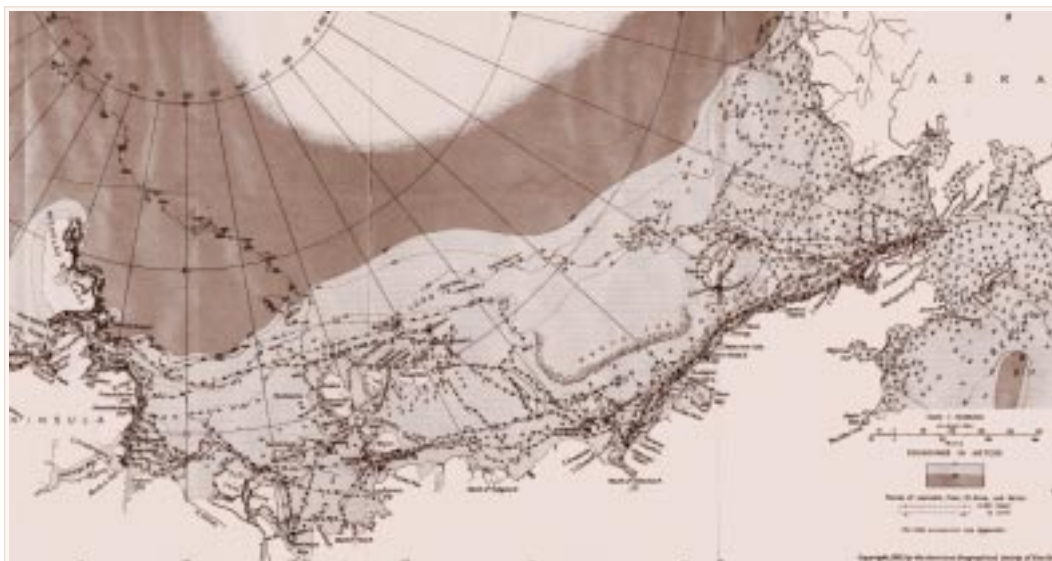
geodetic, mathematical, oceanographic and geophysical works. In 1870 the forerunner of today's National Weather Service was formed, followed the next year by the Office of Commissioner of Fish and Fisheries, the forerunner of the National Marine Fisheries Service. The libraries of these organizations joined to become the NOAA Central Library upon the formation of NOAA in 1970.

Housed within the NOAA Central Library are over 2500 science and engineering journals, including runs dating from the eighteenth century. Although most journal titles are English, there are many German, French, Eastern European, and Asiatic journals dating from the nineteenth and early twentieth centuries. The library also holds approximately 500,000 stand-alone volumes dating from 1485 forward. Included in these are annual reports and documents published by the ancestor agencies of NOAA, oceanic and terrestrial expedition reports for many agencies and governments since the late eighteenth Century, a large number of polar science and exploration documents, and a number of old atlases, maps, and diagrams of various instruments and scientific concepts.

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The NOAA Library website at www.lib.noaa.gov hosts not only the Library catalog but also WINDandSEA, the Library guide to the oceanic and atmospheric sciences; the NOAA Browser pointing to NOAA offices and programs; the NOAA Photo Library which has 30,000 public domain images on-line; the NOAA History Web site which contains a vast amount of historical information relevant to NOAA and its ancestor agencies; and the library imaging project with over 2,000,000 pages online, including Coast Survey Annual Reports 1852-1950, National Marine Fisheries Service Annual Reports 1871-1940, and a broad array of weather and climate data, reports, maps and other information from the US and many other countries going back to 1861.

For questions concerning the Library and its collections or to arrange a tour for individuals or groups, call the reference desk at 301-713-2600 ext.124 or e-mail albert.e.theberge.jr@noaa.gov.



The Russian Hydrographical Expedition to the Arctic 1911-15. In: Geographical Review, Vol. 15, 1925. Page 398. Accompanies the article "The Siberian Sea Road," by N. A. Transehe. Pages 367-398.



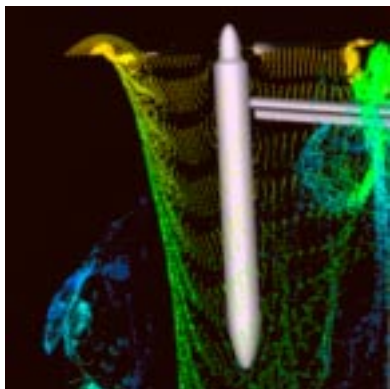
Above: Paraselena, November 30, North UMBERLAND Sound. In: "The Last of the Arctic Voyages...", by Sir Edward Belcher, 1855, vol. I. P. 169. From the NOAA Photo Library (www.photolib.noaa.gov/library/libr0552.htm). To the right: Title page to: ... Hydrodynamica ..., by Daniel Bernoulli, 1700-1782. Published in 1738. Online at www.photolib.noaa.gov/library/libr0385.htm. Search for more NOAA photos at www.photolib.noaa.gov/library.

Materials in the History of Physics and Allied Sciences at the NASA Ames Research Center

by Leilani Marshall

Physical sciences have long been central to the mission of the NASA Ames Research Center. Ames Aeronautical Laboratory was founded in December 1939 along the southern shore of the San Francisco Bay, and hosted the world's greatest collection of wind tunnels. Renamed the NASA Ames Research Center in October 1958, researchers here provided quick answers to questions about flight along the supersonic and hypersonic frontier, especially to solve the problems of atmospheric re-entry.

NASA Ames has managed some spectacularly successful spacecraft projects—like the Pioneer series of planetary explorers, the airborne infrared telescopes, the Viking Life Detection experiments, and the Galileo probe. Still, the Ames laboratories have served as NASA's primary repository of expertise in new sciences, enabling technologies, and component design. As America broadened its efforts in spaceflight and planetary exploration, Ames staff developed the necessary expertise in robotics, internetworking and information technology, supercomputing, computational fluid dynamics, computational chemistry, thermal protection, materials science, microelectronic mechanical systems, and now nanotechnology. Ames also served NASA's need for fundamental research in the life sciences—radiation biology, gravitational biology, human factors, planetary environments, and astrobiology.



Computer-simulated image of viscous flow about rotor and wing of the V-22 Osprey in hover. Photo courtesy of NASA.

The NASA Ames History Office was established in October 2003 to collect, preserve and explore the history of the Center. We built an archive in the high bay of a decommissioned wind tunnel, and began actively collecting material. Processed and ready for research are about 30 linear feet of reference materials spanning the history of the Center. This includes Center newsletters, press releases, technical summaries, brochures, and a few recorded interviews and presentations. Newer collections highlight the history of the Pioneer series of spacecraft—the

first to encounter Jupiter, Saturn and the heliopause. Records describe the design and construction of the Pioneer spacecraft and instrumentation, and studies generated by the data returned on celestial mechanics, astrodynamics, and planetary geography. The History Office also houses a growing collection of artifacts.

The official repository for NASA Ames, as a federal entity, is the National Archives and Records Administration—Pacific Region (NARA), twenty miles north in San Bruno. The most complete Ames records at NARA deal with Ames as a laboratory of the National



Pioneer 10 encounter with Jupiter, 1973. Photo courtesy of NASA.

Advisory Committee for Aeronautics, and are a treasure trove of material on fluid mechanics, flight research, wind tunnel design, and precision instrumentation during the 1940s and 1950s. Early spaceflight is covered in a separate series of records at NARA (Record Group 255.4.1). Formerly classified Ames work

in hypersonics and missile design prior to 1958 is covered in this series, as are the many Ames contributions to manned spaceflight in the 1960s. Official records more recent than 1972 are housed in the Federal Records Center and controlled by the Ames record manager.

Finding Aids to materials at the NASA Ames Research Center and at NARA San Bruno are available at <http://history.arc.nasa.gov>. Also found there are links to NASA's legacy data archives, which should be the first stop for historians doing more internalist studies of the space life sciences and planetary sciences. The site also contains PDF files on the major histories of the Center, as well as a growing bibliography of research on the history of NASA Ames projects and researchers. For further information contact Leilani Marshall, Archivist, NASA Ames History Office, MS 207-1, Moffett Field, CA 94035-1000, phone number 650-604-6430, or send e-mail to history@mail.arc.nasa.gov, Internet <http://history.arc.nasa.gov/>

That we can think in ways that we know belonged to eras of which we are not permanent members can, I believe, help us as historians to think about contemporary science. The science of our day, too, will someday belong to an earlier era.... The experience of dealing with older science can lead us to a deeper understanding of what it means to enter into the thought of our current age without being captive to it.

—Frederick L. Holmes

Preservation of Archives at the U. S. Naval Observatory

by Brenda G. Corbin

The majority of the early records of the U. S. Naval Observatory (USNO), mid 1800s to about 1930s, are currently in Record Group 78 at the National Archives and Records Administration (NARA). A smaller amount of USNO archives, up to 1970, has also been placed in NARA. The remainder of the archives are still housed in the USNO Library. These archives range from the mid 1800s to the present.

Much of the archival materials from the 1930s forward had for many years been kept in the various departmental offices where the records originated. Meanwhile, as older staff retired, many feared that the history files in their offices might not survive and turned these records over to the Library. These files also contained much non-historical material not belonging in the archives. A recent acquisition was the papers (about 25 boxes) of the former Scientific Director, Dr. K. Aa Strand (1907-2000).

Steven J. Dick, former historian of the USNO, spent over 15 years writing and researching the history of the USNO, *Sky and Ocean Joined, the U. S. Naval Observatory 1830-2000* (Cambridge University Press, 2003). Dr. Dick organized the archives on hand and used these plus other sources to write this complete history. Once the history was finished, the historian's position was abolished due to budget cuts, but material kept arriving in unsorted boxes.

At this point, the USNO History Committee was reactivated and the Librarian named Chair. The Committee decided to transfer all archival material to NARA. Much work would be involved and each Committee member already had a full-time position at USNO. One retiring staff member agreed to pack his department's archives (ca. 1950s-early 1990s) into the boxes required by NARA. Materials from file cabinets were placed into 97 boxes and he wrote very brief notes about the contents of each box. However, no time has been available as yet to enter this contents information onto the required forms SF-135 which must be placed in each box before transfer to NARA. How could the rest of this transfer be accomplished? Several solutions were suggested, some unusual.

One proposal was an Eagle Scout project, in which the Scouts would move materials from file cabinets and other boxes into the approved NARA boxes and gather the boxes (more than 300) into a central location for pick-up by NARA. There would be no sorting of materials, only direct transfer into NARA boxes. However, the Scout Council did not approve this project, preferring a more traditional Eagle project.

A smaller work project took place this summer when Science and Engineering Apprentice Program (SEAP) students assigned to the USNO spent a seminar period (1.5 hours) transferring

materials from older boxes to the NARA boxes. Although no weeding or sorting of these materials could be done without much more training, the contents of approximately 25 boxes were moved into the NARA boxes. Even this very short project probably gave these students some appreciation for the archival materials.

The Librarian, who retired on October 1, 2005, proposed a part-time position where she would work only on the archives project until the files are ready to be transferred. Due to budget cuts within the Department of Defense, this position has not yet been approved. With most of the older USNO staff members retiring, it is a real concern that corporate memory of these archives will be lost. Although the members of the History Committee are aware of the problem and concerned, finding time and personnel to carry out this archives transfer project will be very difficult.

The problem facing the USNO is not unusual. As institutions face budget cuts, historians and archivists are not high on the list of required employees: scientific positions must take precedence. We can only hope that a solution can be found before someone later decides these materials are useless and relegates them to a dumpster.

NSF Funding for Science Studies Reorganized

The National Science Foundation (NSF) Science and Technology Studies (STS) Program and the NSF Societal Dimensions of Engineering, Science, and Technology (SDEST) Program no longer exist under those titles. The new, consolidated program title is Science and Society (S&S), which can be found on the NSF Website at www.nsf.gov/funding. In the text box, type "Science and Society" (without the quotes) and then select "--SBE/SES: Social & Economic Science" from the drop-down menu. Then click on the "Search" button.

The new program includes the following components: Ethics and Values in Science, Engineering, and Technology (EVS); History and Philosophy of Science, Engineering, and Technology (HPS); Social Studies of Science, Engineering, and Technology (SSS); and Studies of Policy, Science, Engineering, and Technology (SPS). The annual target dates for proposals are **February 1** and **August 1**.

For information on EVS and SPS, contact Priscilla Regan at pregan@nsf.gov.

For information on HPS and SSS, contact Ron Rainger at rirainger@nsf.gov.

For information on dissertation research support, contact John Perhoni at jperhoni@nsf.gov.

The Norman Lockyer Observatory and its Archives

by George A. Wilkins

Norman Lockyer, born in 1836, became an amateur astronomer and science journalist during the 1860s while serving as a clerk in the War Office. In 1868 he devised a spectroscopic method of observing solar prominences. This led to an academic career at what is now the Imperial College in South Kensington, London, where he set up and directed the Solar Physics Observatory. He was the editor of *Nature* from its founding in 1869 until 1919 and wrote 17 astronomical books. He was knighted in 1897 and received many national and international honors.

Sir Norman retired as professor of astronomical physics in 1901, and two years later he married a widow who had inherited land at Sidmouth in Devon. They built a retirement home there, and starting in 1912 the Hill Observatory was built on the ridge above the house. Sir Norman died in August 1920 and the observatory was renamed the “Norman Lockyer Observatory” (NLO). His son W.J.S. Lockyer, himself an astronomer, had been assistant director and now became director until his sudden death in 1936. The two main telescopes, known as the Kensington and McClean Telescopes, were twin refractors used mainly for stellar spectroscopy.

In 1948 the University College at Exeter (now the University of Exeter) gave additional funding and, in effect, took control of the NLO. Astronomical observing ceased in 1961 and the site was then used for geophysical observations. In 1986 the NLO site was sold to East Devon District Council and the library and archives were transferred to the University of Exeter. The Ob-

servatory is now operated by the NLO Society, an educational charity, and is regularly opened to the public and school groups.

The archives of the Observatory may be consulted in the reading room for the Special Collections section of the University’s library. Full collection-level descriptions of the material are available on the University’s Web site and more detailed lists are in preparation.

The archives are held in three principal classes: (1) EUL MS110: Lockyer Research Papers, ca. 1860-1920. The most important part is the residue of the correspondence between Lockyer and over 900 correspondents. Unfortunately, it consists almost entirely of the letters received by Lockyer. (*The author would be glad to receive information about letters by Lockyer in the archives of other observatories and institutions.*) This class also includes eclipse notebooks; notes on lectures and addresses; papers relating to the Royal Commission on Scientific Instruction, of which he was secretary in 1871-1877, etc. (2) EUL MS72: Norman Lockyer Observatory Papers, ca. 1913-1989. This class includes correspondence, reports and memoranda, photographs and other items of an administrative and historical character, as well as “research files” — boxes of assorted working papers whose value, if any, could only be assessed by someone familiar with the field, such as the observation of variable stars. (3) EUL MS 114: Papers of Norman Lockyer (Royal Astronomical Society) ca. 1876-ca.1969. These are papers relating to the Observatory that are held by NLO Corporation, on long-term loan from the Royal Astronomical Society. There are also some smaller collections.

Other archival materials relating to Norman Lockyer and the NLO are held by the Imperial College at South Kensington, the University of Leicester, the Bodleian Library at the University of Oxford, and the archives of the Royal Greenwich Observatory (Cambridge University Library). The AIP’s International Catalog of Sources and the Web site of the UK’s National Register of Archives show further materials. The NLO Society itself has recently recovered nearly 8,000 glass negatives from the Science Museum, of which over 6,000 are of stellar spectra.

For more detailed information and references see G. A. Wilkins, “The Archives of the Norman Lockyer Observatory,” *Journal of Astronomical Data*, vol.10, part 7, 2004, issued as the book *Astronomical Heritages: Astronomical Archives and Historic Transits of Venus*, ed. C. Sterken & H. W. Duerbeck (Brussels: Vrije Universiteit Brussel, 2005). For the Lockyer Observatory, contact George A. Wilkins, Mathematics Department, University of Exeter, North Park Road, Exeter EX4 4QE, United Kingdom, or e-mail g.a.wilkins@exeter.ac.uk. The contact at the University of Exeter is the Archivist, Special Collections, Old Library, University of Exeter, Prince of Wales Road, Exeter EX4 4PX, UK, Web site www.ex.ac.uk/library/special.



Halloween 1983, Professor Larry Jones as Martin Veltman, with the real Martin Veltman. Photo courtesy AIP Emilio Segrè Visual Archives, Lawrence Jones Collection.

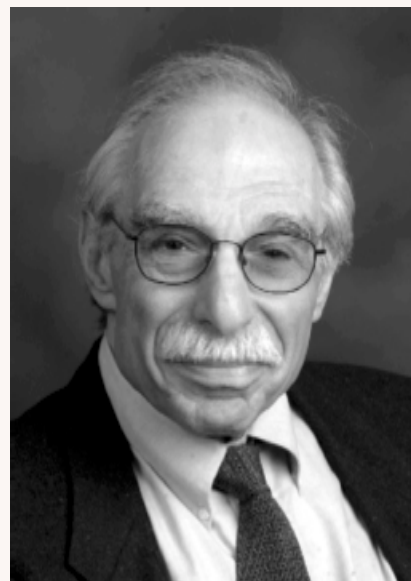
First APS/AIP Abraham Pais Prize for the History of Physics Awarded to Martin Klein

Martin J. Klein, Eugene Higgins Professor Emeritus of History of Physics and Professor Emeritus of Physics at Yale University, is the winner of the 2005 APS/AIP Abraham Pais Prize for the History of Physics “for his pioneering studies in the history of 19th and 20th-century physics, which embody the highest standards of scholarship and literary expression and have profoundly influenced generations of historians of physics.” He delivered his Pais Lecture, “Physics, History, and the History of Physics,” at the APS meeting in Tampa, Florida, on April 18, 2005.

Klein received his higher education in physics at Columbia University and MIT and was appointed to the faculty of the Case Institute of Technology in 1949. He spent a year as an NRC Fellow at the Dublin Institute of Advanced Studies in 1952-1953, received a Guggenheim Fellowship to study at the Lorentz Institute of Theoretical Physics of the University of Leiden in 1958-1959, and served as Acting Chairman of the Department of Physics at Case during 1966-1967. His research was principally on the theory of thin ferromagnetic films and on various theoretical problems in statistical mechanics.

Klein’s research began to turn to the history of physics during his year in Leiden, when he published a two-part paper on Paul Ehrenfest’s contributions to the development of quantum statistics and edited Ehrenfest’s *Collected Scientific Papers*. In 1962-1963 he published further papers on Ehrenfest’s work and penetrating studies of Planck and the beginnings of quantum theory and of Einstein’s first paper on quanta. During the following four years, he published several more papers on Planck’s and Einstein’s contributions to quantum theory, and Einstein’s, Schrödinger’s, Planck’s, and Lorentz’s letters on wave mechanics, which he translated into English. This distinguished body of historical work led to the award of a second Guggenheim Fellowship in 1967-1968 and to his appointment as Professor of the History of Physics at Yale University in the fall of 1967. Since then he has held a number of visiting appointments at other universities, lectured widely, and published a large number of further historical papers, as well as his outstanding biography of Ehrenfest and biographies of Ehrenfest, Einstein, and Gibbs for the *Dictionary of Scientific Biography*. In addition, he served as senior editor of four volumes of the *Collected Papers of Albert Einstein*, further enhancing his reputation as one of the most profound analysts of Einstein’s life and work. Klein is a Fellow of the AAAS and of the APS and has been elected to the Académie Internationale d’Histoire des Sciences, the National Academy of Sciences, and the American Academy of Arts and Sciences.

Report prepared by Roger H. Stuewer, chair of the first Pais Prize Selection Committee.



Historian of physics Martin Klein, first winner of the joint APS/AIP Abraham Pais Prize for the History of Physics. Photo courtesy of the American Physical Society.

Rich Array of Donations to Niels Bohr Library in 2005

Books

A number of academic and corporate libraries are consolidating and, in the process, weeding out duplicates or older texts. In response to a listserv announcement asking librarians to send us their “dirty old books,” the Niels Bohr Library received many generous gift donations this year. Goucher College Library gave us a large number of books as a result of their weeding project, from which we were able to add many into our collection including volume 18 of the *Handbuch der Physik* edited by S. Flügge; our collection of these important prewar Handbucher, which physicists usually acquired only as a particular volume caught their eye, is now nearly complete. We have also received significant donations from **Geoffrey Eichholz**, **Raymond Murray** and **Martin Klein**. **Stephen Brush** made a large contribution to the Niels Bohr library from his private collection as well.

THE EMILIO SEGRÈ VISUAL ARCHIVES

Our collection—whose online selection of 7,000 continues to grow and is now available in an improved format—received donations of photographs from **Lawrence W. Jones**, **Eugenio Carrara**, **R. Ronald Rau**, **Susan Kilbride**, **François Englert**, **Franco Selleri**, **Warren Washington**, **John T. Jefferies**, **David Smith**, **Sooyoung Chang**, **Richard Beards**, and **Richard I. Brown**. We would also like to thank the many people who donated photographs to us through the *Physics Today* obituary office. The response to our emailed inquiries to them has been resoundingly positive.

Member Society Presidents **William Yost**, **Susan Muller**, **Richard Peterson**, **John Orcutt**, **Howard Amols**, the late **John Bahcall**, **David Aspnes**, and **Eric W. Van Stryland** helped keep our Member Society Presidents Gallery current by donating portraits. We also received portraits of this year’s Nobel Laureates, **David J. Gross**, **H. David Politzer**, and **Frank Wilczek**. All new photos are being scanned and mounted on the Web, but we are now taking steps to make sure that signatures are obscured because of the rising threat of identity theft.

MANUSCRIPT MATERIALS

The Niels Bohr Library received a variety of donations this year, continuing our tradition of preserving and promoting the history of physics and related sciences. **George Rideout** submitted the annual addition of the **Gravity Research Foundation's** Essay Contest entries for 2005 (0.5 linear feet). In addition to this yearly donation to the archive, **William P. Elliot** added his unique Papers on **Carbon Dioxide and Climate Change**, 1977-1991 (1.0 linear feet) and **Robert H. Romer** donated the lecture notes of **Robert B. Whitney** (278 pages), taken during a course on quantum mechanics taught by **J.H. Van Vleck**. And **Cabell Pearse** contributed his notes on the lecture "Chemical thermodynamics," delivered in 1950 at Caltech (0.25 linear feet) by **John Gamble Kirkwood** (1907-1959), professor of Chemistry at Cornell and Yale. **Robert D. Hill** donated a copy of the essay "Theoretical views on the new particles," co-authored by **Murray Gell-Mann** and **Abraham Pais** (23 pages), presented at the International Physics Conference at Glasgow in 1954 and printed in the Conference Proceedings.

Every year some of AIP's Member Societies update the archives with documentation of their activities past and recent. The **American Association of Physics Teachers** added two collections: the **Records of the AAPT from 1940-1986** (4.0 linear feet) and the **History of the Piaget Workshops** from 1973-1976 (0.5 linear feet, donated by **Warren Hein** and AAPT). **Janis Bennet** donated the records of the **Society of Rheology's Bingham Award** nominations for 1991-1997 (1.0 linear feet). The Bingham Award is granted by the Society for outstanding contributions in the field of rheology. The **American Astronomical Society** was also an especially active donor this year: **James Hilton**, from their **Division on Dynamical Astronomy** contributed an Addition to Records for the years 1970-2005 (8 file folders), and **A.G. Davis Philip**, former Director of Educational Activities, made a large contribution of the files of the **Harlow Shapley Visiting Lectureship Program** from 1980-1999 (9.0 linear feet). Finally, **Ronald E. Mickens** of the **American Physical Society, Southeastern Section** donated his records to the archives (2000-2004, 1.0 linear feet).

MISCELLANEOUS, MANUSCRIPT BIOGRAPHIES AND INSTITUTIONAL HISTORIES

The Niels Bohr Library expanded its collection of institutional histories with the addition of two small collections this year. **Anita Hollier** of the **CERN (European Organization for Nuclear Research) Archives** sent us documentation of the founding of CERN in 1952, containing newspaper clippings and photocopies of original reports from the meeting outlining the plan for the founding of CERN. Authors of these reports include **Niels Bohr** and **Werner Heisenberg** (20 pages). **Jay Maynard** donated some recollections by **Laymon N. Miller**, taken from Miller's lecture at the 75th Anniversary Meeting of the **Acoustical Society of America** in New York City in 2004 (43 pages), titled, "Some anecdotes and recollections about Acoustical Society presidents whom I have known," including **Leo L. Beranek**, **Richard H. Bolt**, **Charles Paul Boner**, **Frederick V. Hunt**, **Warren P. Mason**, **Paul Sabine**, and **John C. Steinberg**.

We received several additions to our manuscript biography collection this year. One of these additions comes from **Joan Bromberg**, who donated a copy of her talk titled "**Leonard Mandel** and experimental tests of quantum mechanics: a talk for the APS Forum on the History of Physics, 16 April 2005" (15 pages) discussing Mandel's quantum mechanics experiment paper (1991), as well as his earlier work from the 1960s. **Ron Doel** also increased this collection with his donation of the **autobiography of Eric B. Kraus**, written in 2003 (10 pages). Further, **Kenneth W. Ford** sent files documenting the research and recollections of **George E. Pugh** (23 pages). Topics include personal recollections and various materials on what became the Gravity Probe-B satellite program at Stanford University. Also from Ken Ford came one file folder of Pugh's recollections of **Hugh Everett III**. Meanwhile the archive added a resource from the Internet, **Eugene Shikhovtsev's** biographical sketch of **Hugh Everett III** (23 pages). *Such scholarly postings on the Internet are of uncertain durability and we would appreciate hearing of any that we might print out on paper to assure permanent preservation in our archives.*

ORAL HISTORY INTERVIEWS

Since our last report, two interviewers sent their interviews to us in the fall of 2004. The first was an interview with **Marshall Rosenbluth** by Kai-Henrik Barth, and Owen Gingerich conducted two different interviews of the late **Philip J. Morrison** as part of the project to have him fully interviewed by different people on aspects of his career.

More oral history interviews were acquired in 2005 as part of the Physicist in Industry Project. Those interviewed were: **Nicholas Holonyak** interviewed by Babak Ashrafi, and **Herbert Fushfeld** and **Donald Keck**, interviewed by Tom Lassman. In addition, Babak Ashrafi conducted oral history interviews with **Charles Slichter**, **Anthony Leggett**, and **David Pines**.

This past year David DeVorkin of the Smithsonian Air & Space Museum interviewed **W. M. Baum**, **Thomas C. Van Flandern** and **Victor Slabinski** and **Steve Maran** with the AIP Center's cooperation. Other interviews received this year were: **Mordechai Vanunu** conducted by Alexei Kojevnikov, **John P. Huchra** by Patrick McCray, **Michael Gruntman** by David Stern, and **John T. Jefferies**, conducted years ago by Spencer Weart and edited by Jefferies now that he is retired.

We also received two DVD's of a conversation between **Benjamin Bederson**, **Edward Gerjuoy**, **Sidney Borowitz** and **Larry Spruch** and an interview with **Harold J. Morowitz** conducted by Yi Doogab; none of these are planned to be transcribed.

For full information on all our archival materials visit the International Catalog of Sources search page at www.aip.org/history/icos. Note that you can use a drop-down menu at the bottom of the page to restrict your search to particular types of materials in the Niels Bohr Library and not at other repositories. For our books, click the "Books" tab. Here too you can limit your search using drop-down menus. For example, **Publication date: 193?** and **Subject: Astronomy** will give a list of the 28 astronomy titles in the Library published in the 1930s.

New Websites in the History of Physics and Allied Fields

We periodically comb the web for resources in history of physics and allied fields. Our newest finds have been listed here, and also added to our extensive list at www.aip.org/history/web-link.htm. If you would like to suggest a link, please e-mail us at chp@aip.org.

Antique Spectacles and Other Vision Aids
www.antiquespectacles.com

Breaking Through: A Century of Physics at Berkeley: 1868-1968
<http://bancroft.berkeley.edu/Exhibits/physics>

The Online Archive of California
www.oac.cdlib.org

Oaister - (Open Archive harvester)
<http://oaister.umdl.umich.edu/o/oaister>

Frank Oppenheimer
www.exploratorium.edu/frank

There's Plenty of Room at the Bottom - An Invitation to Enter a New Field of Physics, by Richard P. Feynman
www.zyvex.com/nanotech/feynman.html

Richard Feynman: The Douglas Robb Memorial Lectures (video) www.vega.org.uk/series/lectures/feynman

Quantum Physics Online (simulated experiments and demonstrations)
www.quantum-physics.polytechnique.fr

Transistor Museum
http://semiconductormuseum.com/Museum_Index.htm

Transistor History
www.lucent.com/minds/transistor

CIRES History (Cooperative Institute for Research in Environmental Sciences University of Colorado at Boulder)
<http://cires.colorado.edu/about/history>

History of Physics at Oxford
www.physics.ox.ac.uk/history.asp?page=HistoryBrief

Nuclear Medicine
www.atomicmuseum.com/tour/nuclearmedicine.cfm

National Museum of Nuclear Science and History
www.atomicmuseum.com

History of CalTech
<http://nobelprize.org/physics/articles/goodstein>

Raymond Davis Solar Neutrino Experiments with historical press releases and video
www.bnl.gov/bnlweb/raydavis/research.htm

Interview with John N. Bahcall
www.sciencewatch.com/interviews/john-n-bahcall.htm

A Neutrino Timeline
www.phys.hawaii.edu/~jgl/nu_timeline.html

History of detection efforts for gravity waves
<http://web.syr.edu/~dmalling/history.html>

Rutgers Cyclotron History photo tour
www.physics.rutgers.edu/cyclotron/cyc_hist_album.shtml

History of the RIKEN cyclotron
www.rarf.riken.go.jp/rarf/acc/history.html

Who Was Ernest O. Lawrence?
www.llnl.gov/llnl/history/eolawrence.html

History of GE Cyclotron unit
www.hammersmithimanet.com/history/history.shtml

World Year of Physics 2005 from Europe
www.wyp2005.org/overview.html

World Year of Physics 2005 from the U.S.
www.physics2005.org

Franklin Tercentenary for 2006
www.benfranklin300.org

The Trial of Galileo
www.law.umkc.edu/faculty/projects/ftrials/galileo/galileo.html

Early electric, magnetic & related medical instruments at the Bakken Museum
<http://thebakken.org/artifacts/categories.htm>

Early Vacuum Technology
www.mcallister.com/vacuum.html

Robert Boyle
www.bbk.ac.uk/Boyle

A History of physics (ancient to 19th century) from the Catholic Encyclopedia
www.newadvent.org/cathen/12047a.htm

Newton's Bucket (http://www-groups.dcs.st-and.ac.uk/%7Ehistory/HistTopics/Newton_bucket.html) and other topics in history of mathematical physics from St. Andrews (http://www-groups.dcs.st-and.ac.uk/%7Ehistory/Indexes/Math_Physics.html)

Physics instruments (mostly 19th century) in the schools & University of Sassari, Sardinia
http://spazioinwind.libero.it/gabinetto_di_fisica/indexg.htm

19th Century Physics from VictorianWeb
www.victorianweb.org/science/physintro.html

Osborne Reynolds (as in the number)
www.eng.man.ac.uk/historic/reynolds/oreyna.htm

Timeline of Nobel Prize Winners
www.nobel-winners.com/Physics

Linus Pauling and the Nature of the Chemical Bond
<http://osulibrary.oregonstate.edu/specialcollections/coll/pauling/bond>

History of Radiation Geophysics
http://gsc.nrcan.gc.ca/gamma/hist_e.php

History of Stanford Physics dept.
www.stanford.edu/dept/physics/history

History of the Acoustical Society of America
<http://asa.aip.org/history.html>

Images of physicists on postage stamps
www.th.physik.uni-frankfurt.de/%7Ejr/physstamps.html

Recent Publications of Interest

Compiled by Babak Ashrafi

This is our usual compilation of some (by no means all) recently published articles on the history of modern physics, astronomy, geophysics and allied fields. Note that these bibliographies have been posted on our Web site since 1994, and you can search the full text of all of them (along with our annual book bibliography, recent Catalog of Sources entries, exhibit materials, etc.) by using the “Search” icon on our site map: www.aip.org/history/s-indx.htm

To restrict your search to the bibliographies, enter in the box: [your search term(s)] AND “recent publications”

The Summer 2005 issue of **American Heritage of Invention and Technology** is about the atomic bomb, with “The Beauty of the Bomb” by Stephen Zanichkowsky, “We Knew That If We Succeeded, We Could at One Blow Destroy a City,” a final interview with Edward Teller by Michael Lennick, and “The Atomic Cannon” by James Lamont. Jeremy Bernstein writes about Bachelier’s work on Brownian motion in **The American Journal of Physics**, vol. **73**, no. 5. - no. 6 has Luisa Bonolis on “Bruno Pontecorvo: From slow neutrons to oscillating neutrinos.” No. 9 has B. Cameron Reed’s “Resource Letter MP-1: The Manhattan Project and related nuclear research.”

Hasok Chang and Sang Wook Yi examine “The Absolute and Its Measurement: William Thomson on Temperature” in vol. **62** no.3 of **Annals of Science**.

Giora Hon and Bernard R. Goldstein describe “How Einstein Made Asymmetry Disappear: Symmetry and Relativity in 1905” in **Archive for History of Exact Sciences**, vol. **59**, no. 5.

Astronomy & Geophysics contains “Unwinding the discovery of spiral nebulae” by M. E. Bailey, C. J. Butler and J. McFarland in vol. **46**, no. 2.

K.G. Valente asks “‘A finite universe?’ Riemannian geometry and the Modernist theology of Ernest William Barnes” in the June 2005 issue of **The British Journal for the History of Science**.

Centaurus, vol. **47**, no. 1 offers Ad Maas’s “Institutionalised Individualism Amsterdam Physics between the World Wars.”

The **CERN Courier** commemorates two physicists with “Fred Hoyle: pioneer in nuclear astrophysics” by Simon Mitton in vol. **45**, no. 6, and “George Placzek – an unsung hero of physics” by Jan Fischer, vol. **45**, no. 7.

Foundations of Physics, vol. **34**, no. 11 contains Max Jammer’s intriguing “The Strange Story of the Concept which Inaugurated Modern Theoretical Physics,” and Silvio Bergia’s “The

Way We Were: Bubble Chamber Pictures, Pion-Nucleon Interactions and Polology.” Vol. 35, no. 4, contains Michael Redhead’s “Broken Bootstraps—The Rise and Fall of a Research Programme.”

The Elusive Icon: Einstein, 1905-2005, is the focus of **Isis**, vol. **95**, no. 4, with an introduction by Peter Galison, “The Mystery of the Einstein-Poincaré Connection” by Olivier Darrigol, “Einstein, Race, and the Myth of the Cultural Icon” by Fred Jerome, and “The Relativity Revolution from the Perspective of Historical Epistemology” by Jürgen Renn. Volume **96**, no. 1 has “X-rays as Evidence in German Orthopaedic Surgery, 1895-1900” by Andrew Warwick as well as “Government Science in Postwar America: Henry A. Wallace, Edward U. Condon, and the Transformation of the National Bureau of Standards, 1945-1951” by former AIP Center project historian Thomas C. Lassman.

F. Richard Stephenson and David A. Green conduct “A Reappraisal of Some Proposed Historical Supernovae” in the **Journal for the History of Astronomy**, vol. **36**, part 2, no.123.

“Early Paper Astronomical Computers” are described by Nick Kanas in the March/April 2005 issue of **Mercury**.

Vol. **43**, no. 2 of **Minerva** is about physics in Spain, with “Dictating to The Dictator: Augustus Trowbridge, The Rockefeller Foundation, and the Support of Physics in Spain, 1923-1927” by Víctor Navarro-Brotóns, Jorge Velasco González, and José Doménech Torres; “Professionalism And Technocracy: Esteve Terradas and Science Policy in the Early Years of the Franco Regime” by Antoni Roca-Rosell; “Nuclear Power for Catalonia: The Role of the Official Chamber of Industry of Barcelona, 1953-1962” by Francesc X. Barca Salom; “The Birth of Particle Physics In Spain” by Víctor Navarro-Brotóns, Jorge Velasco González, and José Doménech Torres; “Science on the Periphery. The Spanish Reception of Nuclear Energy: An Attempt at Modernity?” by Albert Presas I. Puig.

Naturwissenschaftliche Rundschau vol. **58** for June and July (nos. 6 and 7) include a two-part article by Klaus Henschel on “Einstein und die Lichtquantenhypothese: Die stufenweise Anreicherung der Bedeutungsschichten von ‘Lichtquantum’.”

Notices of the American Mathematical Society reviews some historical relationships in vol. **52**, no. 8 with “Mathematics, Biology, and Physics: Interactions and Interdependence” by Michael C. Mackey and Moisés Santillán.

Vol. **20** of **Osiris** has discussions of “Purges in Comparative Perspective: Rules for Exclusion and Inclusion in the Scientific Community under Political Pressure” by Richard Byler, former AIP Center post-doc Alexei Kojevnikov and Jessica Wang; of “National States and International Science: A Comparative History of International Science Congresses in Hitler’s Germany, Stalin’s Russia, and Cold War United States” by former Center post-doc Ronald E. Doel, Dieter Hoffmann, and Nikolai Kremontsov; of “Laying the Foundation for Wartime Research:

A Comparative Overview of Science Mobilization in National Socialist Germany, Japan, and the Soviet Union” by Walter E. Grunden, Yutaka Kawamura, Eduard Kochinsky, Helmut Maier, and Masakatsu Yamazaki; of “Wartime Nuclear Weapons Research in Germany and Japan” by Walter E. Grunden, Mark Walker, and Masakatsu Yamazaki; and of “Aerodynamics and Mathematics in National Socialist Germany and Fascist Italy: A Comparison of Research Institutes” by Moritz Epple, Andreas Karachalios, and Volker R. Remmert.

Jan Frercks writes about “Fizeau’s Research Program on Ether Drag: A Long Quest for a Publishable Experiment” in vol. 7, no. 1 of **Physics in Perspective**. Lawrence Badash considers “American Physicists, Nuclear Weapons in World War II, and Social Responsibility” in no. 2 of the same volume. Also in no. 2, John Krige writes about “Isidor I. Rabi and CERN,” and Frank Tibor about “Ever Ready to Go: The Multiple Exiles of Leo Szilard.” These two no.s contain the two-part interview of William A. Fowler by John Greenberg.

AIP’s own **Physics Today** has several article of interest including: “The Uranium Bomb, the Calutron, and the Space-Charge Problem” by William E. Parkins in May 2005; “Citation Statistics from 110 Years of Physical Review” by Sidney Redner in June 2005; and “Einstein’s Unknown Insight and the Problem of Quantizing Chaos” by A. Douglas Stone in August 2005.

Nancy Thorndike Greenspan writes about “Max Born and the Peace Movement” in the April 2005 issue of **Physics World**.

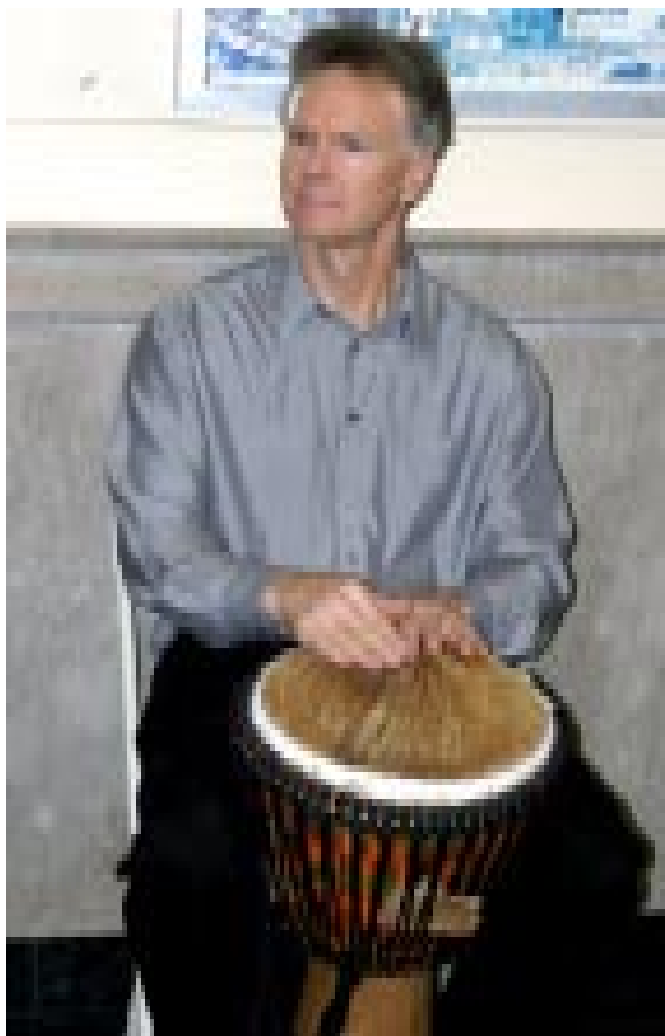
M. I. Monastyrskii writes about “John von Neumann” in **Physics-USpekhi**, vol. 47, no. 12.

Rocco J. Perla and James Carifiol take a shot at “The Nature of Scientific Revolutions from the Vantage Point of Chaos Theory: Toward a Formal Model of Scientific Change” in vol. 14 of **Science & Education**, while Seiya Abikol offers “The Light-Velocity Postulate: The Essential Difference between the Theories of Lorentz-Poincaré and Einstein.”

Kristrún Gunnarsdóttir considers a topic familiar to physicists in **Social Studies of Science**, vol. 35, no. 4, with “On the Role of Electronic Preprint Exchange in the Distribution of Scientific Literature.”

Grants and Meetings

For grants, meetings and other news items, visit the History of Science Society’s Web site to see their very comprehensive list. View Grants & Prizes, Conferences and Colloquia, Jobs & Fellowships, and News, at www.hssonline.org/profession. There are also resources available at the American Physical Society’s Forum on the History of Physics Web site at www.aps.org/units/fhp. Click on ‘Newsletter’ for information on grants, meetings, and other history of science community news.



*Ralph Leighton was a close friend of Richard Feynman and his drumming and adventure partner. The two best-sellers, *Surely You’re Joking Mr. Feynman* and *What Do You Care What Other People Think?* are “as told to Ralph Leighton.” Here Ralph played the drums at the dedication of a stamp and a street renamed after Feynman, as a tribute to his friend. Donated by the photographer, Gerald Skloot, May 2005.*

Documentation Preserved

Compiled by Jennifer S. Sullivan and Melanie Brown

SIMON FRASER UNIVERSITY. UNIVERSITY ARCHIVES. BURNABY, BRITISH COLUMBIA V5A 1S6, CANADA

Records of **Simon Fraser University, Department of Physics**. Collection dates: 1965-1986. Size: 6.5 linear feet. Restrictions: Several series are subject to access restrictions.

PUGWASH CONFERENCES ON SCIENCE AND WORLD AFFAIRS. 63A GREAT RUSSELL ST., LONDON WC1B 3BJ, UK

The Papers of **Joseph Rotblat, 1908-2005**. Size: Approximately 500 linear feet. Restrictions: This collection is not available for immediate access; please contact the repository for information.

ROYAL HOLLOWAY COLLEGE LIBRARY. UNIVERSITY OF LONDON.
EGHAM HILL, EGHAM, SURREY, ENGLAND

The Papers and Correspondence of **William Hunter McCrea, 1904-1999**. Collection dates: 1904-1999. Size: 90 linear feet. Restrictions: Users must register with the Royal Holloway Archives.

UNIVERSITY OF EXETER. LIBRARY, EXETER EX4 4PT, ENGLAND

Research Papers of **Norman Lockyer, 1836-1920**. Collection dates: Circa 1860-1920. Size: 30 linear feet.

Letters to **Norman Lockyer, 1836-1920**. Collection dates: 1869-1919. Size: One file folder, (13 letters).

Papers relating to the **Norman Lockyer Observatory**. Collection dates: 1851-1989. This collection can be viewed by appointment only. Please contact the repository for information. Size: 56.0 linear feet.

UNIVERSITÉ LOUIS PASTEUR. STRASBOURG. 4, RUE BLAISE PASCAL,
67000 STRASBOURG, FRANCE

Papers of **Marguerite Catherine Perey, 1909-1975**. Collection dates: 1929-1975. Size: 11.5 linear feet. Restrictions: This collection is open, except for series MP 86.

CALIFORNIA INSTITUTE OF TECHNOLOGY. INSTITUTE ARCHIVES. 1201
EAST CALIFORNIA BLVD. (MAIL CODE 015A-74), PASADENA, CA 91125

The Papers of **Robert F. Bacher, 1905-2004**. Collection dates: 1926-1994. Size: 40 linear feet.

The Papers of **Murray Gell-Mann, 1929-**. Size: 70 linear feet.

Oral History interview with **Petr Vogel, 1937-**. Dates of interview: 2002-2003. Transcript size: 36 pages. This interview was conducted by Shirley K. Cohenin in two sessions.

CARNEGIE INSTITUTION OF WASHINGTON. DEPARTMENT OF TERRESTRIAL
MAGNETISM. LIBRARY AND ARCHIVES. 5241 BROAD BRANCH ROAD, N. W., WASHINGTON, D.C. 20015

Papers of **James Percy (J.P.) Ault, 1881-1929**. Size: 12.5 linear feet.

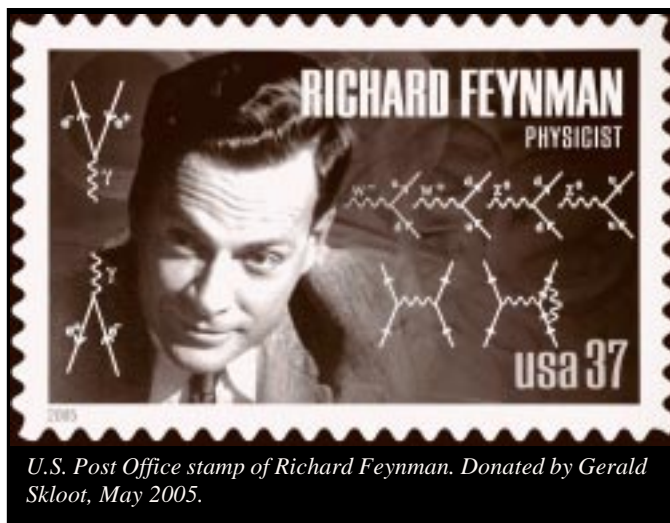
Papers of **Louis Agricola Bauer, 1865-1932**. Collection dates: 1892-1939. Size: 2.5 linear feet.

Papers of **Robert Hubbard Mansfield, 1909-**. Collection dates: 1932-1988. Size: 0.85 linear feet.

Records of the "**Maud**" expedition, **1918-1925**. Collection dates: 1918-1925. Size: 5.5 linear feet.

Records of the **Nuclear Physics Program, 1927-1963**. Size: 7.5 linear feet.

The Records of the **Ocean Magnetic Survey**. Collection dates: 1905-1946. Size: 74 linear feet. These records consist of the



U.S. Post Office stamp of Richard Feynman. Donated by Gerald Skloot, May 2005.

data collected on the voyages of the "Galilee" and the "Carnegie" and the reductions of that data into a usable format.

CARNEGIE INSTITUTION OF WASHINGTON. GEOPHYSICAL LABORATORY.
LIBRARY AND ARCHIVES. 5241 BROAD BRANCH ROAD, NW, WASHINGTON, D.C. 20015

Papers of **Norman Levi Bowen, 1887-1956**. Collection dates: 1907-1980. Size: 3 linear feet.

CARNEGIE MELLON UNIVERSITY. HUNT LIBRARY. 4909 FREW STREET,
PITTSBURGH, PA 15219

The Papers of **Clifford Glenwood Shull, 1915-2001**. Collection dates: 1937-1997. Size: 23 linear feet. Restrictions: Records involving refereeing of manuscripts for publication or review of government proposals are unavailable to the general public for twenty years from receipt by the Carnegie Mellon University Archives. These materials will be available January 2024.

DUDLEY OBSERVATORY. 107 NOTT TERRACE, SUITE 201,
SCHENECTADY, NEW YORK 12308

Records of the **Dudley Observatory**. Collection dates: 1981-2005. Size: 20 linear feet.

DUKE UNIVERSITY. ARCHIVES. 341 PERKINS LIBRARY, DUKE UNIVERSITY,
DURHAM, NC 27706

Records and papers of **Otto Meier, 1908-1979**. Collection dates: 1931-1979. Size: 20.5 linear feet. Restrictions: For a period of 25 years from the origin of the material, permission in writing from the office of origin and the University Archivist is required for use. 24 hours advance notice is required.

HARVARD UNIVERSITY. HOUGHTON LIBRARY. CAMBRIDGE, MA 02138

Papers of **Andrei Sakharov, 1921-1989**. Updated information: This collection has been MOVED from Brandeis University to Harvard's Houghton Library (2005).



Victor F. Weisskopf at the University of Michigan at Ann Arbor. Photo courtesy AIP Emilio Segrè Visual Archives, Lawrence Jones Collection.

INDIANA UNIVERSITY. OFFICE OF UNIVERSITY ARCHIVES AND RECORDS MANAGEMENT. BRYAN HALL 201, 107 SOUTH INDIANA AVENUE, BLOOMINGTON, IN 47405

The Papers of **Roger G. Wilkinson, 1912-1969**. Collection dates: 1921-1968. Size: 4 linear feet.

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. INSTITUTE ARCHIVES AND SPECIAL COLLECTIONS. M.I.T. LIBRARIES, RM. 14N-118, CAMBRIDGE, MA 02139

Papers of **Morris Cohen, 1911-2005**. Collection dates: 1936-1990. Size: 13 linear feet. Restrictions: there are restrictions to access portions of this collection. Researchers may request permission to use restricted materials. Consult the M.I.T. Archivist for further information.

NEW MEXICO STATE UNIVERSITY. ARCHIVES AND SPECIAL COLLECTIONS DEPT. P.O. BOX 30006, LAS CRUCES, NEW MEXICO 88003

Papers of **Walter H. Haas, 1917-**. Collection dates: 1935-2002. Size: 9 linear feet.

Papers of **Hugh M. Johnson, 1923-**. Collection dates: 1936-1986. Size: 2 linear feet.

Papers of **Clyde William Tombaugh, 1906-1997**. Collection dates: 1908-2000. Size: 150 linear feet.

OHIO STATE UNIVERSITY. UNIVERSITY ARCHIVES. 2700 KENNY ROAD, COLUMBUS, OH 43210

Oral history interview with **Alfred George, 1923-**. Date of interview: June 26, 2001. Sound recording: 3 cassettes. Transcript available. This interview was conducted by Karen Brewster in

Fairbanks, Alaska, through the Byrd Polar Research Center Archival Program.

Oral history interview with **Robert A. Helliwell, 1920-**. Date of interview: September 17, 2002. Sound recording: 2 cassettes. Transcript not available. This interview was conducted by Brian Shoemaker at Stanford University, through the Byrd Polar Research Center Archival Program.

UNIVERSITY OF CALIFORNIA, BERKELEY. THE BANCROFT LIBRARY. BERKELEY, CA 94720-6000

Papers of Frank Oppenheimer, 1912-1985. Collection dates: 1902-1985. Size: 5 linear feet.

UNIVERSITY OF CALIFORNIA, SAN DIEGO. ARCHIVES OF THE SCRIPPS INSTITUTION OF OCEANOGRAPHY. UNIVERSITY OF CALIFORNIA, SAN DIEGO MAIL CODE C-075-C. LA JOLLA, CA 92093-0175

Records of **Harald Ulrik Sverdrup, 1888-1957**. Collection dates: 1936-1948. Size: 1.25 linear feet.

UNIVERSITY OF MINNESOTA. UNIVERSITY ARCHIVES. 10 WALTER LIBRARY, 117 PLEASANT ST. S.E., MINNEAPOLIS, MN 55455

Papers of **Frank Oppenheimer, 1912-1985**. Collection dates: 1946-1959. Size: 0.25 linear feet.

UNIVERSITY OF TEXAS AT AUSTIN. CENTER FOR AMERICAN HISTORY. ARCHIVES OF AMERICAN MATHEMATICS. AUSTIN, TX 78713

Papers of **Edsger W. Dijkstra, 1930-2002**. Collection dates: 1948-2002. Size: 40 linear feet. This Collection forms part of the Archives of American Mathematics.

VANDERBILT UNIVERSITY. THE JEAN AND ALEXANDER HEARD LIBRARY. 419 21ST AVENUE SOUTH NASHVILLE, TENNESSEE 37240

The Papers of **Robert T. Lagemann, 1912-1994**. Size: 32 linear feet.

The Papers of **William Thomas Pinkston, 1931-2001**. Size: 8 linear feet.

WORLD DATA CENTER FOR GLACIOLOGY, BOULDER (NATIONAL SNOW AND ICE DATA CENTER) UNIVERSITY OF COLORADO, BOULDER

The Papers of **Harry Fielding Reid, 1859-1944**. Collection dates: 1870-1910.

There is always a certain charm in tracing the evolution of theories in the original papers; often such study offers deeper insights into the subject matter than the systematic presentation of the final results, polished by the words of many contemporaries.

– Einstein

Recent Publications on the History of Physics

A supplement to the Newsletter of The Center for History of Physics/Niels Bohr Library
and The Forum for History of Physics, American Physical Society

Compiled by Per and Eleanor Dahl

■ BOOKS

This list is the twelfth of an annual series. It includes books on the history of modern physics and related topics (including astronomy, geophysics, and physics in medicine) published in 2004 or later. (See earlier lists for details on how the list is prepared.) Articles in journals are listed elsewhere in the *Newsletter*.

For more comprehensive coverage of publications on the history of science, consult the annual Current Bibliography in *Isis* (published by the University of Chicago Press for the History of Science Society). Publications on the history of astronomy are listed in the *Journal of Astronomical History and Heritage*.

We suggest that you use this list to recommend books for your institution's library; ISBN numbers are given, when available, for this purpose. Prices (which are for hardcover editions unless otherwise indicated) are subject to change by the publisher.

Permission is hereby granted to copy freely all or part of this list for any educational purpose. More extensive versions of this and the previous lists are available on the Center's Web site at:

www.aip.org/history/web-news.htm#bibl

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Friends of the Center for History of Physics

Friends' Donations Reach Record High

2004 was a record year for donations to the Friends of the Center for History of Physics, with a total of \$1,022,700 collected in annual gifts and personal solicitations. The annual giving program received about \$119,500 in gifts. This probably would have been our highest level of annual giving in any year except that several large donors initiated an endowment for the History of Physicists in Industry (HoPI) and diverted their annual gifts (and a bit extra) to this.

Significant gifts included \$800,000 for the Avenir Endowment for the Oral History of Physics, \$25,000 to the Center's Campaign, "History That Matters", by Margaret Taylor Macdonald in honor of the Center's former Associate Director Joan Warnow-Blewett, \$40,000 to the Center's Oral Histories program by the Avenir Foundation, and gifts from John Armstrong, Charlie Duke and Don Scifres to the HoPI endowment.

Last year we sent a solicitation letter to readers of *Physics Today* and *The Industrial Physicist*. Such mass mailings are primarily meant as a way to attract new donors to the Center and are conducted every four or five years. The mailing paid for itself and did find a number of new Friends, who we hope will stay with us. The rate of return, however, was not as high as in previous mailings, a problem faced by all organizations like ours as mailboxes become ever more stuffed with such solicitations.

This year we will launch a new planned giving program to encourage Friends to join our Legacy Circle by announcing plans for a bequest. We will also send a letter to all Friends to request a special donation to our History that Matters Campaign to help fill in the final \$400,000 needed to reach our \$3 million goal. Meanwhile the Friends' Web site has been significantly improved and updated. Please visit the new site at www.aip.org/history/historymatters. We welcome your comments and suggestions for improvement.

Because of the Katrina Emergency Tax Relief Act passed in September, 2005, donors may write off up to 100% of their adjusted gross income (AGI) for cash donations made to any 501(c)(3) charity such as the History Center from August 28 until December 31, 2005. Usually donors may only write off up to 50% of their AGI in deductions for charitable gifts. For more information, please consult your tax advisor or contact AIP's Development Office at historyfriends@aip.org or 301-209-3006.

History That Matters Campaign

While the American Institute of Physics has and will continue to generously provide for much of the Center's daily expenses, the nature of the Center's important archival work requires a long-term plan to maintain adequate funds to continue its operations indefinitely. Additionally, the Center's challenges keep multiplying, and it must increase both the scope and intensity of its activities to meet them. That requires strong financial resources. With these factors in mind, the Development Committee of the Friends of the Center inaugurated a Campaign to raise awareness of the Center and its endowment needs. To fully endow the Center, we will need over \$40 million. As a first step in that direction, the "History That Matters" campaign will raise \$3 million to endow certain important programs, adding to the over \$7.5 million already in the endowment fund. Several Friends of the Center and foundations have already generously responded to this call for help, and we have successfully raised more than 85% of our goal of \$3 million. We ask you to help us raise the remaining \$400,000 in this year. A letter and brochure has been recently mailed to the Friends of the Center and other interested parties. If you would like to help encourage further gifts to the Center by setting up a challenge grant, or would like to pledge a multi-year gift, or make a contribution now, please call 301-209-3006 or e-mail the Center at historyfriends@aip.org.

Save Our Physics Heritage

Physics experiments are conducted in the records of national laboratories and... but to us what they mean is... the Center for History of Physics preserves and makes... available a record of their lives as they... have passed here and how what... really happened.

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Careful Planned Giving Helps All

Opportunities abound at the Center to make a lasting impact on the history of science while planning your estate. Your financial assistance can have a large effect on our future programs, and the Center may have a way to help you meet your financial goals as well. The Center, through the American Institute of Physics, is able to offer attractive planned giving strategies that may make sense for you to consider now. For example, you may be able to use your appreciated securities to fund a planned gift that will help the Center, and in turn receive capital-gain tax savings and reduce your estate tax liability. Possible advantages of planned giving to you and your family include:

- ▶ endowing and naming a program of great importance to you
- ▶ reducing or eliminating capital gains costs and/or estate tax liability
- ▶ achieving a significant tax reduction
- ▶ gaining recognition for an important contribution to preserve and make known the history of physics

Of course, the greater good will be achieved by your gift which will secure a long-term preservation program or establish a much needed outreach program at the Center to help us in our task of setting the record straight.

Your gift will be recognized in several ways. The Legacy Circle recognizes and honors those Friends who have thoughtfully provided for the Center's future. Your name will be inscribed on a plaque, and annually your name will be listed in our newsletter. Naming opportunities also exist for significant gifts. By including the Center in your estate plans, you are ensuring that we will be able to con-

tinue to build upon the strength of our programs for many decades to come.

For additional information about the Center's Legacy Circle, and how a planned gift can help you and your family's financial and estate plans, please e-mail the Center at historyfriends@aip.org or call 301-209-3006. Thank you for your interest in supporting us through our Legacy Circle. All inquiries are confidential and without obligation.

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If to all the other perceptions of the scientist were added an internal knowledge of the history of his own subject, that combination would be capable of producing a higher state of awareness and a greater elasticity of mind.

– Herbert Butterfield

Friends of the Center for History of Physics



“It troubles me that the public sees physics only as the mother of technology. No one any longer pays attention to—if I may call it—the spirit of physics, the idea of discovery, the idea of understanding. I think it’s difficult to make clear to the non-physicist the beauty of how it fits together, of how you can build a world picture, and the beauty that the laws of physics are immutable.”

Hans Albrecht Bethe (1906–2005) was born July 2, 1906, in Strasbourg, then part of Germany. He received his doctorate in theoretical physics at the University of Munich in 1928. He married Rose Ewald in 1939, a daughter of P.P. Ewald, the well known X-ray physicist.

In 1933, Bethe was dismissed by the Nazi regime from his faculty position at the University of Tübingen in Germany. He was hired by Cornell University in 1935, and remained associated with it until his death. After Pearl Harbor, Bethe joined the MIT Radiation Laboratory radar project. In 1943 he was appointed head of the theoretical division of the newly created Los Alamos Laboratory, helping to create the fission and, later, fusion bombs. However, he was dedicated to peace and a world free of nuclear armaments and often spoke and wrote on the topic. He received the 1967 Nobel Prize in Physics “for his contributions to the theory of nuclear reactions, especially his discoveries concerning the energy production in stars.” Bethe’s other scientific accomplishments, mainly in the areas of nuclear and quantum physics and continuing into his old age, are too numerous to list here (there are several good biographies on the Web - see www.physicstoday.org/vol-58/iss-10/contents.html and click on *Hans in War and Peace*). He died on March 6, 2005.

Bethe loved history, and understood its importance in setting the record straight. He was a long-time supporter of the AIP Center for History of Physics, and one of its first Friends. Since the earliest funding appeals, Bethe signed or co-signed letters on behalf of the Center to the Friends, and continued his support through his last years. On his death, he left the Center a generous bequest.



L-R: Fermi; Bethe; Staub; Weisskopf; and unknown. Sitting: Mrs. Staub; Mrs. Segre; and unknown. On a ski break near Los Alamos, 1943. Photo courtesy AIP Emilio Segrè Visual Archives, Segrè Collection.



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Center for History of Physics Newsletter

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