



Pouring optical glass in Germany at the turn of the 20th century, an illustration by Erich Kuithan in Die Glasindustrie in Jena (Jena, 1909). This book turned up during final processing of the papers of spectroscopist W. F. Meggers for the archives of the Niels Bohr Library. The Jena glassworks, created by the physicists Carl Zeiss and Ernst Abbe along with chemist Otto Schott, was a leading supplier of material for spectroscopes, telescopes, and many other instruments.

Plans for Celebrating the Benjamin Franklin Tercentenary in 2006

by Nicola Twilley, Director of Public Programming,
Benjamin Franklin Tercentenary

Physicists will scarcely get a chance to recover from the World Year of Physics 2005, celebrating the centenary of Einstein's "miracle year," when they will be asked to remind students and the public about America's first great physicist. An Act of Congress in 2002 created a Federal Commission to

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National Park Service to Study Manhattan Project Sites

by Cynthia C. Kelly, President, Atomic Heritage Foundation

The National Park Service has been authorized to take the first step in creating one or more National Park sites for the Manhattan Project, the top-secret effort to make an atomic bomb in World War II. With the support of the New Mexico, Tennessee and Washington delegations, the 108th Congress passed the "Manhattan Project National Historic Park Study Act" (S. 1687) that was signed by the President on October 18, 2004.

The new legislation directs the Secretary of the Interior "to conduct a study on the preservation and interpretation of the historic sites of the Manhattan Project for potential inclusion in the National Park System." The law sets a deadline of two years after the date on which funds are made available to carry out the study. The expectation is that funds will be available through the Department of Energy for this purpose in FY 2005.

The study will address the national significance, suitability, and feasibility of designating the Manhattan Project sites at Los Alamos, New Mexico; Hanford, Washington; and Oak Ridge, Tennessee; and possibly other sites associated with the Manhattan Project, as units of the National Park System. The study will consider both Federal and non-Federal properties associated with the Manhattan Project. Thus properties associated with the cultural and social aspects of life in the "Secret Cities" of the Manhattan Project will be considered along with the scientific laboratories and facilities essential to producing the first atomic bombs.

One of the principle challenges will be identifying who will be responsible for managing the Manhattan Project properties for the long term. The Department of Energy does not want to be the long-term steward for these properties and the National Park Service wants to avoid substantial new burdens. With input from state and local governments, and nonprofit and private sector organizations, the National Park Service study will have to address how best to allocate these responsibilities.

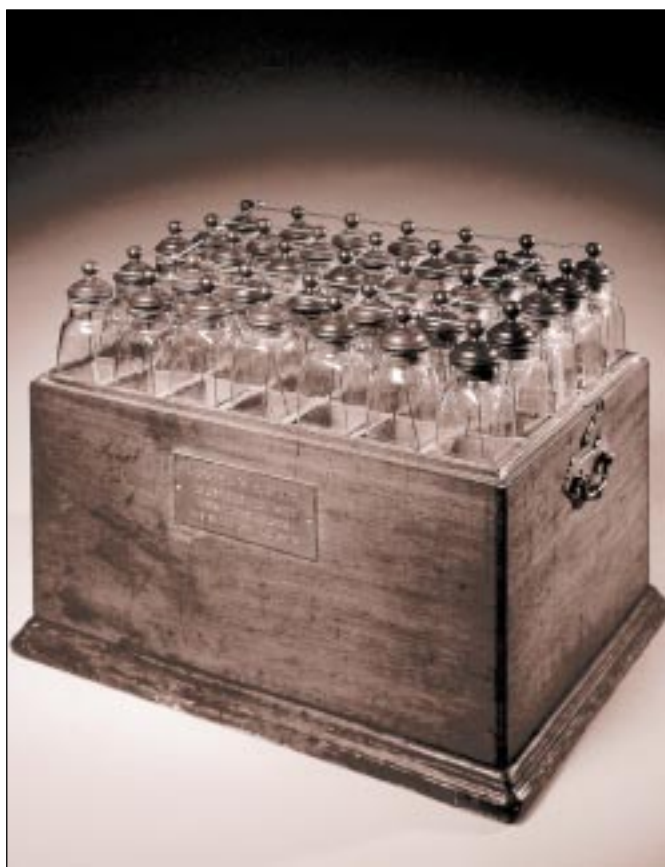
The Department of Energy has several significant first-of-a-kind facilities from the Manhattan Project that are threatened to be demolished as early as 2005. For example, the B Reactor at Hanford, the first full-scale plutonium production facility, is

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(Plans for Celebrating the Benjamin Franklin Tercentenary in 2006, continued from page 1)

recommend government programs to commemorate the 300th anniversary of Benjamin Franklin's birth in 2006. Dr. Rosalind Remer serves as Executive Director of the Federal Commission which operates, with the assistance of the Benjamin Franklin Tercentenary, a consortium created in 2000 by the American Philosophical Society, The Franklin Institute, the Library Company of Philadelphia, the Philadelphia Museum of Art, and the University of Pennsylvania. The office of the Benjamin Franklin Tercentenary is the official government point of contact and coordinator for state, local, international, and private sector initiatives organized around the 300th anniversary.

The celebrations organized under the Tercentenary's leadership will aim to educate the general public about Franklin's enduring legacy and to inspire renewed appreciation of the values he embodied. Among other events, an international traveling loan exhibition, *Benjamin Franklin: In Search of a Better World*, will premiere in Philadelphia before touring five major cities between December 2005 and February 2008, and will continue to exist into the future as a virtual exhibition on the Internet. It will feature the largest collection of Franklin materials — original works of art, documents, and artifacts — ever assembled, as well as interactive, multi-media installations, in order to demonstrate and explore Franklin's life, character, and achievements. A website, www.benfranklin300.org, is being developed to make publicly available a wealth of information about Tercentenary-related events, new publications on Franklin, new school curriculums for youth, an image bank, time lines, bibliographies, fact sheets, and links to other useful Franklin-related pages on the Internet. For more information contact Nicola Twilley, Director of Public Programming, Benjamin Franklin Tercentenary, 135 S. 18th Street, Suite 702, Philadelphia, PA 19103; phone: (215) 557-0733, e-mail: ntwilley@benfranklin300.org

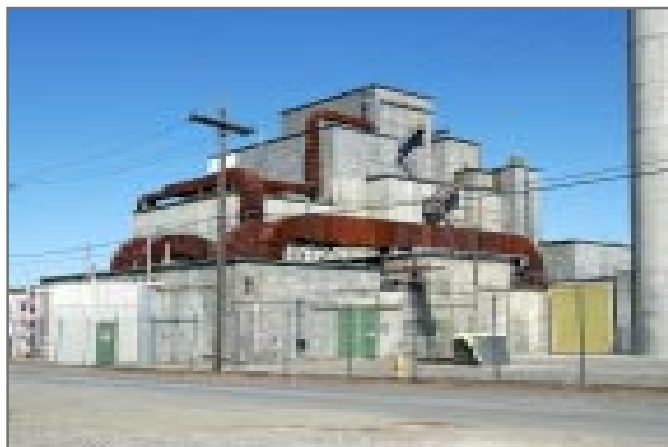


Franklin's Leyden Jars, now at the American Philosophical Society. After earning enough to retire as a gentleman, Franklin undertook electrical experiments, which led him among other achievements to explain the action of these capacitors in terms of positive and negative electricity. When he went to Paris as ambassador of the newborn American republic, Franklin's fame as the "Newton of Electricity" gave him an entree to French society that provided crucial leverage in gaining the support that proved invaluable for the nation's independence. Photo by Peter Harholdt. See this in color! Visit www.aip.org/history/newsletter/spring2005

(National Park Service to Study Manhattan Project Sites, continued from page 1)

threatened to be "cocooned," a process that would destroy its historical integrity. The legislation is vital to preserving the B Reactor and many other Manhattan Project properties.

The Manhattan Project has extraordinary significance to American and world history and left an indelible legacy for the 21st century. The new legislation is a very important step in preserving some tangible remains from the Manhattan Project such as properties, equipment, artifacts and oral histories before it is too late. The Atomic Heritage Foundation testified before Congress



on behalf of the Manhattan Project sites last March and will be working closely with the National Park Service and the Manhattan Project sites on the study.

For further information, please contact the Atomic Heritage Foundation at 202-293-0045, e-mail info@atomicheritage.org or see www.atomicheritage.org.

The B Reactor at Hanford was the world's first full-scale plutonium-production reactor. Shut down in 1968, it is an important historic property from the Manhattan Project and Cold War era. Photo courtesy of the Atomic Heritage Foundation. See this in color! Visit www.aip.org/history/newsletter/spring2005.

How Can Historians Use Tape-Recorded Interviews?

by Babak Ashrafi, *Historian, AIP Center for History of Physics*

The use of oral interviews as evidence is a topic of lively debate among historians. Attitudes about the use of interviews vary widely because, while memory usually works remarkably well, it is enormously complicated. The complications of memory fall into two categories. Researchers in many disciplines, including history, law, neuroscience and the social sciences, have found that remembering involves a large degree of personal interpretation. Interview subjects do not simply recall a series of snapshots of the past. Rather, they conceive of stories in order to express memories. Second, memory is malleable and inexact. People sometimes forget things or remember things that never happened. Moreover, later events can affect memories of an episode. Such events might be interactions with other historical actors, or even interactions with an interviewer.

Depending on the questions that historians bring to their research, they grapple with these complications of memory in two ways. One way is to resolve any conflict between memories and documents to achieve a consensus among all the available sources. Interviews can give alternative interpretations to documents, help guide a researcher through the documentary archive, and point to new documents. In the other direction, documents can help to stimulate recollections and to correct errors. This is an approach that historian Lillian Hoddeson has characterized as productively exploiting the malleability of memory and the conflict between memory and documents.

An alternative approach is to note that memories are themselves products of social and historical processes, not just a jumble of truths and falsehoods. Memories are historical events that can be explicated like other historical events. In this approach, a community such as the community of physicists is seen to produce more than new physics knowledge. Communities also produce new members and reproduce the community as a whole. Collective and individual expressions about the past — the ways that scientists frame their stories, how they position themselves in those stories — serve to construct individual and community identity. This approach focuses less on whether memories are accurate, and more on how memories function.

Different historians find that different approaches to handling oral history interviews will be more or less helpful in answering their particular questions. Many historians have contributed to, and used, the oral history collection at the AIP's Niels Bohr Library. That collection is one of the Library's most

heavily used resources, second only to the Emilio Segrè Visual Archive. The earliest interview in the collection is that of Max Born, conducted by Thomas Kuhn in 1960. The collection continues to grow, currently containing more than 850 cataloged interviews and nearly 50,000 pages of transcripts, as well as separate collections in the archives of interview tapes by sociologists and journalists. In addition to conducting its own interviews, the Center for History of Physics supports interviews conducted by other scholars through a grants-in-aid program (www.aip.org/history/web-grnt.htm) and through free transcription services, collects audio recordings and interviews donated to the Niels Bohr Library, and keeps a record in the online International Catalog of Sources of interviews on the history of physics (and allied fields like astronomy and geophysics) that are held in other archives. The Center will conduct a pilot project this year to put selected interviews from its collection on the World Wide Web. Eventually we hope to put online the entire collection, subject of course to any restrictions requested by those who were interviewed.

Interested researchers can find interviews in the collection by searching the International Catalog of Sources, or browse an alphabetical list, starting on the Center's home page (www.aip.org/history).

Center Receives Endowment for The Oral History of Physics

The Avenir Foundation, which has provided several smaller grants to the Center over the years, has generously provided \$800,000 for an endowment to support oral history interviewing. Annual proceeds from the Avenir Endowment for The Oral History of Physics will cover the costs associated with preparing, recording, transcribing, indexing and archiving interviews with living physicists, astronomers, geophysicists, and allied scientists. The Center has been able to immediately implement the program since the Foundation generously provided startup funds to cover the costs until the endowment interest becomes available.

History of science celebrates the human element... Knowing something about the very people who gave us science—about their lives, their struggles and sometimes even the persecutions they suffered—will add a warm, even heroic, human quality to an otherwise dry and mechanical discipline.

—Pangratios Papacosta



Thatcher viewing model of manned space station. Photo courtesy of the Ronald Reagan Library. See this in color! Visit www.aip.org/history/newsletter/spring2005.

History of Physics and Allied Fields at the Reagan Library

By Diane Barrie, Archivist, Ronald Reagan Library

The Reagan Administration, 1981-1989, was an active time for scientific research and new scientific ventures. The space program and the space shuttle continued despite the tragedy of the Challenger disaster in 1986. The 1980s opened with a severe energy crisis gripping the nation. Many of our early records reflect the quest for more domestic oil, new ways to extract domestic oil, and alternative energy sources. In 1983, President Reagan called for a strategic defense involving lasers in space. Although there were many skeptics of the program, it resulted in the Strategic Defense Initiative (SDI) which continues to this day. And in the mid-1980s, the scientific community began a campaign for a federally funded superconducting super collider (SCC). President Reagan gave the go-ahead for this project in 1987. Finally, the specter of AIDS colored the second half of the administration in the intense effort to find a test for the virus, clear the U.S. blood supply, and begin work on some kind of vaccine.

The Reagan Library textual material consists of two main collections of interest to researchers, the **White House Office of Records Management (WHORM) Subject File** and **White Staff and Office files**. In the Reagan Library, the Staff and Office Files offer the most substantive material and is the larger collection. WHORM subject categories can also offer useful material for research. For scientific activities in the 1980s the best categories are AT (Atomic/Nuclear); OS (Outer Space); NR (Natural Resources) and SC (Science). These categories are all available for research. They consist mostly of public correspondence in support of/or against certain projects, but occasionally contain some policy documents. Records on the science projects like the SCC can also be found in various FG (Federal Government)

subject categories, especially pertaining to meetings of the Cabinet and sub-cabinet councils.



July 23, 1987 - National Institutes of Health, President Reagan looking into microscope, and Samuel Broder. Photo courtesy of the Ronald Reagan Library. See this in color! Visit www.aip.org/history/newsletter/spring2005.

The Library has numerous staff and office collections that contain information about scientific efforts in the 1980s. The most relevant collections are the **George Keyworth** and **William Graham** collections. Keyworth and Graham served as the White House Science Advisor/Director of the Office of Science and Technology Policy during the Reagan administration. Their collections consist of memos, correspondence, reports, research and policy papers on all of the scientific issues of the 1980s. Both collections currently have a limited amount of material available for research. Please see the Reagan Library Web site for inventory lists and material that is available.

Numerous scientific data can be found in the staff collections for the **Office of Policy Development**, and the office collections for the sub-cabinet councils, particularly the **Domestic Policy Council**. Most of the information about SDI is located in various staff and office collections for the National Security Council. This material is usually still national security classified information. Our collection also contains correspondence with many physicists, most notably Edward Teller.

The Reagan Library is the first presidential library administered under the President Records Act of 1987. This act allows for presidential records to be opened in response to Freedom of Information Act (FOIA) requests. Researchers may inquire about research or FOIA requests at the Reagan Library by writing the Library, 40 Presidential Drive, Simi Valley, CA 93065, or by calling 1-800-410-8354 and asking for the reference archivist. E-mail should be sent to library@reagan.nara.gov. The library's Web site address is www.reagan.utexas.edu.

Historical materials can be useful in clarifying scientific concepts for students, in two ways: First, the originators of these concepts often supplied excellent expositions of their new ideas, which may be very helpful... Second, in the assimilation of scientific concepts... it may be helpful for the student to go through the same stages in the development of his or her understanding that the scientific community went through in the historical development of the concept.

— Daniel M. Siegel

Enhancing Web Access to Library Catalog

by Babak Ashrafi, Historian, AIP Center for History of Physics

The Niels Bohr Library once kept its catalogs of books, and the International Catalog of Sources for History of Physics and Allied Fields, on cards. These were converted to an electronic database in the 1980s and a Web interface was provided in 1997. The Library has recently achieved another milestone by getting its catalog open to searches through the major Internet search engines.

The Library's catalogs were previously part of the "deep Web." Potential users would have to know that the catalog existed, where to find it, and how to use it, before they could find any catalog record. Now, users can find catalog records in a familiar and simple interface, such as Google, that will lead them to the Library's textbooks, oral history interviews, archives, International Catalog of Sources records and other resources. (The Center's Web exhibits, the Physics History Finding Aids Web site, and the Emilio Segrè Visual Archives were already being indexed by Internet search engines.) Once users have thus found catalog records, they will be able to take advantage of the custom features of the Library's own Web-based search and browse tools.

This took nearly a year of effort to achieve. Center staff had to run a series of tests to understand how the search engines' Web crawlers gathered information about the catalog and how the catalog could be made to provide the desired information. Then, when we created a mechanism that unleashed these crawlers on the catalog, they consistently overwhelmed and crashed the catalog servers.

The Center was fortunately able to use an additional server that was no longer needed in the American Institute of Physics's server farm in Melville, NY. The single server, which had till then performed all the functions required to provide a Web catalog, was replaced with two — one to run the database and another to run the Web interface to the database. Center staff then mirrored the entire contents of the database as Web pages. Search engines now crawl these mirror pages rather than the live catalog so that the catalog servers no longer crash under the load. A researcher landing on a mirror page is immediately forwarded to the corresponding record in the live catalog, providing access to all its features and functions. Finally, we slightly altered the Web page design of catalog records so that users finding them through Internet search engines, rather than the Center's own search interface, would know what they have found and where they have ended up.

As a result, use of the catalogs has increased by a factor of 5 to 10. In January of 2005, users viewed 114,000 catalog records through the Internet search engines. One consequence is increased use of the International Catalog of Sources leading

researchers to resources in the history of physics held at archives other than AIP's. We have already had a researcher come to our own library, who would not have learned we hold a resource of value to her if it had not turned up in a Google search. This project is part of the Center's continuing efforts to find new ways of using the World Wide Web to preserve and make known the history of physics and allied sciences. Readers are invited to look for our catalog records in search engines such as Google. Did you know, for example, that Niels Bohr spoke on NBC radio (in English), and we have it on tape?



The International Catalog of Sources for History of Physics & Allied Fields, a major online resource for scholars, has a new interface at www.aip.org/history/icos.



Mystery Photo

This photo was donated by Ben Snavelly, but we do not have any information about it. Can you identify who is in the photo? If so, please let us know: send e-mail to chp@aip.org, call 301-209-3165, or write AIP History Center, One Physics Ellipse, College Park, MD 20740. Thank you for your help!



Joe Anderson, Tom Lassman, and an IBM researcher examine a semiconductor wafer at the IBM Thomas J. Watson Research Center. Photo courtesy of Cecelia Brescia, AIP. See this in color! Visit www.aip.org/history/newsletter/spring2005.

Physicists in Industry Endowment

The Center's *Project to Document the History of Physicists in Industry* has passed its halfway mark. Project staff have completed site visits at nine of the 15 targeted corporate labs and conducted structured question-set interviews with more than 50 scientists and science managers in corporate research. The Center has also succeeded in raising awareness of the problems of preserving historical information within the industrial physics community. However, the history of applied physics is even more endangered than the Center originally anticipated. Little effort has been made to preserve or make known the history of America's unique system of applied research, and most

of the historical records and memories are at risk of being utterly forgotten within a few decades.

To address this major shortfall, several of the Center's Friends have proposed that an endowment be established to identify, encourage and assist efforts in preserving the historical record of physicists connected with important applied research, the organizations that employ them, and the technologies resulting from their research. This Program will work with a broad range of technical companies and with physicists pursuing applied work in universities and governmental laboratories, including the pivotal national security sector. In addition to working to preserve the record of applied research, the Program will support and encourage the study, interpretation, and presentation of historical materials so that others — particularly young people — may share the excitement of this history and get a better grasp on how

our society really functions.

If you wish to contribute to this endowment, and join the list of benefactors below, please e-mail the Center at chp@aip.org or call 301-209-3006.

*Endowment to Document
the History of Physicists in Industry*

*John Armstrong
Lewis Branscomb
Marc Brodsky
Mildred Dresselhaus
Charles Duke
Don Scifres*

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"

Stephan A. Schwartz writes about "Franklin's Forgotten Triumph: Scientific Testing" in the October 2004 issue of **American Heritage of Invention and Technology**.

In the November 2004 issue of the **American Journal of Physics**, vol. **72** no. 11, Ian J.R. Aitchison, David A. MacManus, and Thomas Snyder offer "Understanding Heisenberg's 'Magical' Paper of July 1925: A New Look at the Computational Details." In the February 2005 issue, vol. **73** no. 2, Travis Norsen takes a new look at "Einstein's Boxes."

The **Annals of Science** contains David Pantalony's "Rudolph Koenig's Workshop of Sound: Instruments, Theories, and the Debate over Combination Tones" in the January 2005 issue, vol. **62** no. 1, and Ana Carneiro's "Outside Government Science, 'Not a Single Tiny Bone to Cheer Us Up!' The Geological Survey of Portugal (1857-1908), The Involvement of Common Men, and the Reaction of Civil Society to Geological Research" in the April 2005 issue, vol. **62** no. 2.

Yuri L. Dokshitzer describes “The Gribov Conception of Quantum Chromodynamics” in vol. **54** of the **Annual Review of Nuclear and Particle Science** published in December 2004.

Issue no. 1 of vol. **59** of the **Archive for History of Exact Sciences** has “Einstein’s Investigations of Galilean Covariant Electrodynamics Prior to 1905” by John D. Norton. Issue no. 3 has “History of the Lenz-Ising Model 1920-1950: From Ferromagnetic to Cooperative Phenomena” by Martin Niss.

The February 2005 issue of **Astronomy** magazine has a special section on “Einstein’s Century,” including “Relativity turns 100” by Richard Panek and “The Man Who Remade the Universe” by Robert Burnham.

Tobias Jung writes about “Oszillierende Weltmodelle versus Urknallmodelle: Das oszillierende Weltmodell Friedmanns, die Ablehnung der Anfangssingularität durch russische Kosmologen und die Zustimmung der katholischen Kirche zur Urknalltheorie Lemaître und Hawkings” in vol **27** no. 4 of the **Berichte zur Wissenschafts-Geschichte**.

Ana Simões considers “Textbooks, Popular Lectures and Sermons: The Quantum Chemist Charles Alfred Coulson and the Crafting of Science” in **The British Journal for the History of Science**, vol. **37** no. 3.

Alex Rabinowitch writes about his father Eugene, who founded the **Bulletin of the Atomic Scientist**, in vol. **61** no. 1.

Karl-Heinz Schlote examines “Carl Neumann’s Forschungen zur Potentialtheorie” in **Centaurus**, vol. **46** no. 2.

More family relations appear in the March 2005 issue of **Discover**, where Michelle Feynman writes “The [Richard] Feynman File,” and in the February 2005 issue, George Dyson writes about his father Freeman in “The Grandest Rocket Ever.”

M. A. B. Whitaker offers “The EPR Paper and Bohr’s Response: A Re-Assessment” in **Foundations of Physics**, vol. **34** no. 9. E. Di Grezia and S. Esposito write about “Fermi, Majorana and the Statistical Model of Atoms” in the same issue.

The September 2004 issue of **Historical Studies in the Physical and Biological Sciences**, vol. **35** no. 1, has “Helmholtz and the Shaping of the American Physics Elite in the Gilded Age” by David Cahan, as well as “The Emergence of the Principle of Symmetry in Physics” by Shaul Katzir, “Quantum Theory and the Electromagnetic World-View” by Suman Seth, and “A Proton Accelerator in Trondheim in the 1930s” by Roland Wittje.

Readers may be interested in Dominique Pestre’s take on “Thirty Years of Science Studies: Knowledge, So-

ciety and the Political” in the December 2004 issue of **History and Technology**, vol. **20** no. 4.

“Gender, Politics, and Radioactivity Research in Interwar Vienna: The Case of the Institute for Radium Research” by Maria Rentetzi appears in **Isis**, vol. **95** p. 359.

Many contributors consider “L’heritage Einstein” included in the February 2005 issue of **La Recherche**.

Christophe Lécuyer asks “What do Universities Really owe Industry? The Case of Solid State Electronics at Stanford” in **Minerva**, vol. **43**, no. 1.

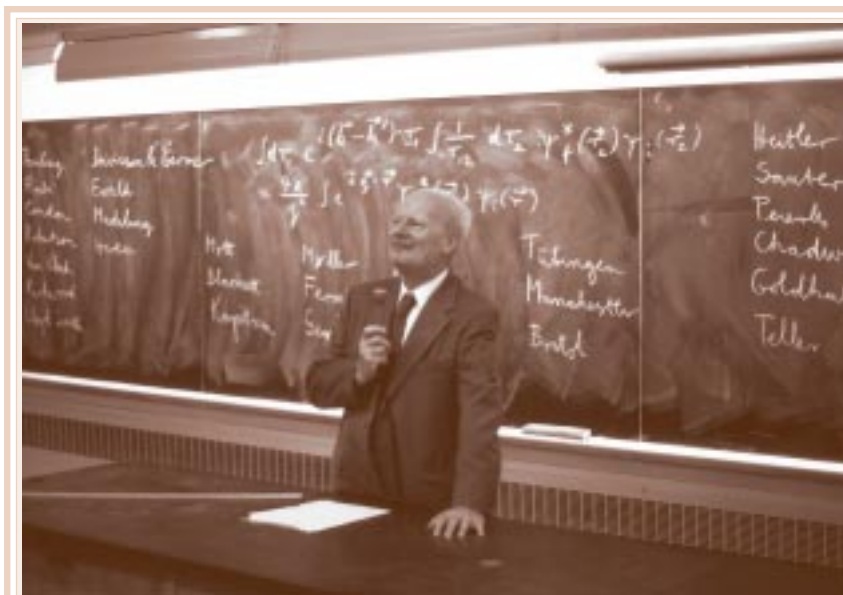
Issue no. 1 of vol. **58** of the **Notes and Records of the Royal Society** has “The Nobel Laureate Sir Chandrasekhara Venkata Raman FRS and his Contacts with the British Scientific Community in a Social and Political Context” by R. Singh and R. Riess. Issue no. 2 has “April 1915: Five Future Nobel Prize-Winners Inaugurate Weapons of Mass Destruction and the Academic-Industrial-Military Complex” by W. van der Kloot, and “Prehistory of the British Crystallographic Association” by D. Blow and S. Wallwork. Issue no. 3 has “The Cavity Magnetron in World War II: Was the Secrecy Justified?” by B. Lovell, and “Shipborne Radar in World War II: Some Recollections” by A. Cook.

Karl-Heinz Schlote has more about “Carl Neumann’s Contributions to Electrodynamics” in **Physics in Perspective**, vol. **6** no. 3. In issue no. 4 of the same volume, Matteo Leone, Alessandro Paoletti and Nadia Robotti describe “A Simultaneous Discovery: The Case of Johannes Stark and Antonino Lo Surdo.” Karen E. Johnson writes “From Natural History to the Nuclear Shell



Nancy Greenspan donating her book The End of the Certain World: The Life and Science of Max Born to Joseph Anderson and Spencer Weart of the Niels Bohr Library, February 10, 2005. Photo courtesy AIP Emilio Segrè Visual Archives.

See this in color! Visit www.aip.org/history/newsletter/spring2005.



The Friends of the Center for History of Physics have received a generous bequest from the estate of the late Hans Bethe. We regret the passing of this great physicist and policy advocate, who did many services for the Center. To read more about him, visit www.physicstoday.org/vol-58/iss-3/bethe.html. Above we see Bethe, (1906-2005) in 1978 at Dalhousie University. Photograph by Roy Bishop, courtesy AIP Emilio Segrè Visual Archives. See this in color! Visit www.aip.org/history/newsletter/spring2005.

D. E. Burlankov recounts an alternative to Einstein's work in "Gravity and Absolute Space. The Works of Niels Bjern (1865-1909)" in vol. **47** no. 8 of 2004, of **Physics-USpekhi**.

There is more on Einstein in the March 2005 issue of **Physik Journal**, including an interview with Hans Bethe (perhaps his last?).

Marianne B. Barnes, James Garner and David Reid consider "The Pendulum as a Vehicle for Transitioning from Classical to Quantum Physics: History, Quantum Concepts, and Educational Challenges" in vol. **13** no. 4-5 of **Science and Education**. Nahum Kipnis discusses "Chance in Science: The Discovery of Electromagnetism by H.C. Oersted" in vol. **14** no. 1.

Vol. **17** no.4 of **Science in Context** has articles about science and art, including "Surrealism and Quantum Mechanics: Dispersal and Fragmentation in Art, Life, and Physics" by Gavin Parkinson and "Explosive Propositions: Artists React to the Atomic Age" by Stephen Petersen.

David Kaiser, Kenji Ito and Karl Hall write about Feynman diagrams in "Spreading the Tools of Theory," **Social Studies of Science**, vol. **34** no. 6.

Studies in History and Philosophy of Modern Physics has "The Puzzle of Canonical Transformations in Early Quantum Mechanics" by Jan Lacki, "Open or Closed? Dirac, Heisenberg, and the Relation between Classical and Quantum Mechanics" by Alisa Bokulich; and "Uncertainty in Bohr's Response to the Heisenberg Microscope" by Scott Tanona, all in September 2004, vol. **35** no. 3.

Sean Johnston's "Shifting Perspectives: Holography and the Emergence of Technical Communities" appears in January 2005, vol. **46** no. 1 of **Technology and Culture**.

Model: Chemical Thinking in the Work of Mayer, Haxel, Jensen, and Suess." Also Joan Bromberg's interview of Arthur L. Schawlow is presented in "The Playful Physicist."

Dieter Hoffmann and Mark Walker describe "The German Physical Society Under National Socialism" in the December 2004 issue of **Physics Today**. The February 2005 issue has Daniel Kleppner, "Re-reading Einstein on Radiation." The March 2005 issue has Alex Harvey and Engelbert Schucking finding an error by Einstein in "A Small Puzzle from 1905."

Herbert Steiner describes "Emilio Segrè: Nuclear Pioneer" in **Physics World**, February 2005. The January 2005 issue had many authors writing about Einstein.

Documentation Preserved

Compiled by Katherine A. Hayes

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/web-news.htm.

SIMON FRASER UNIVERSITY. ARCHIVES DEPARTMENT. 8888 UNIVERSITY DRIVE, BURNABY, BC V5A 1S6, CANADA. CONTACT: FRANCES FOURNIER.

Records of the **Society for Canadian Women in Science and Technology**. Collection dates: 1981-1999. Collection is processed.

Access to some files containing personal information is restricted. Consult the file list and the archivist for further details. Size: 6 linear feet textual material, 29 audio cassettes, 1 video cassette.

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

Papers of **Marguerite Catherine Perey, 1909-1975**. Collection dates: 1929-1975. Papers are open except for series MP 86. Size: 3.5 linear meters.

ARCHIV ZUR GESCHICHTE DER MAX-PLANCK-GESELLSCHAFT. BOLTZMANNSTRASSE 14, D-14195 BERLIN-DAHLEM, GERMANY. CONTACT: DR. MARION KAZEMI.

Additions to the papers of physicists who worked at various Max Planck Institutes. The Archiv zur Geschichte der Max-Planck-Gesellschaft now includes the records of the following physicists: **Sir Ian Axford** (Max Planck Institute for Aeronomy), **Heinrich J. Völk** (Max Planck Institute for Nuclear Physics), and **Hans A. Weidenmüller** (Max Planck Institute for Nuclear Physics).

Papers of **Ludwig Genzel, 1922-2003**. Collection dates: 1949-1998. Size: 9.0 cubic meters.

Papers of **Karl Hermann Hausser, 1919-2001**. Collection dates: 1938-2001. Contact repository for access. Size: 4 meters.

ARCHIVIO DI STATO DI FIRENZE. VIALE GIOVINE ITALIA, 6-50122 FIRENZE, ITALY. CONTACT: ARCHIVIST.

Papers of **Nello Carrara, 1900-1993**. Collection dates: 1909-1993. Size: 34 files.

CALIFORNIA INSTITUTE OF TECHNOLOGY. INSTITUTE ARCHIVES. 1201 EAST CALIFORNIA BLVD. (MAIL CODE 0151-74), PASADENA, CA 91125, USA. CONTACT: CHARLOTTE IRWIN.

Oral History interview with **Carl David Anderson, 1905-1991**. Interview conducted by Harriett Lyle on January 9 - February 8, 1979. Transcript.

Papers of **Robert Fox Bacher, 1905-2004**. Collection dates: 1926-1994. Collection is now processed. Size: 40 linear feet (71 boxes).

Oral History interview with **Robert Fox Bacher, 1905-2004**. Interview in ten sessions conducted by Mary Terrall on June-August 1981, February 1983. Transcript.

Supplement to the papers of the **California Institute of Technology Seismological Laboratory**. This material is unprocessed; contact repository for information on access. Collection dates: 1920s-1950s. Size: 2 linear feet (2 storage boxes).

Oral History interview with **Paul Sophus Epstein, 1883-1966**. Interview conducted by Alice Epstein beginning 22 November 1965. Transcript.

Papers of **Murray Gell-Mann, 1929-**. Collection is partially processed. Size: 70 linear feet (97 boxes).

Papers of **David L. Goodstein, 1939-**. Collection is closed. Size: 24 linear feet (24 boxes and digital files).

Oral History interview with **David L. Goodstein, 1939-**. Interview conducted by Shelley Erwin in 2002. Transcript: 113 pages.

Oral history interview with **Rudolph Arthur Marcus, 1923-**. Interview conducted in 1982. Transcript: 69 pp.

Oral History interview with **Donald E. Osterbrock, 1924-**. Interview conducted by Shirley K. Cohen in 2003. Transcript: 21 pages.

Papers of **William Hayward Pickering, 1910-2004**. This material is unprocessed. Size: 7.5 linear feet (18 boxes).

Oral History interview with **William Hayward Pickering, 1910-2004**. Interview conducted by Mary Terrall on November 7-December 19, 1978. Transcript.

Oral History interview with **William Hayward Pickering, 1910-2004**. Interview conducted by Shirley K. Cohen on April 22 and 29, 2003. Transcript.

Oral History interview with **Robert Phillip Sharp, 1911-2004**. Interview conducted by Graham Berry on 18 December 1979 - 1999 January 1980. Transcript.

Oral History interview with **Victor Wouk, 1919-**. Interview conducted by Judith R. Goodstein on 24 May 2004. Transcript.

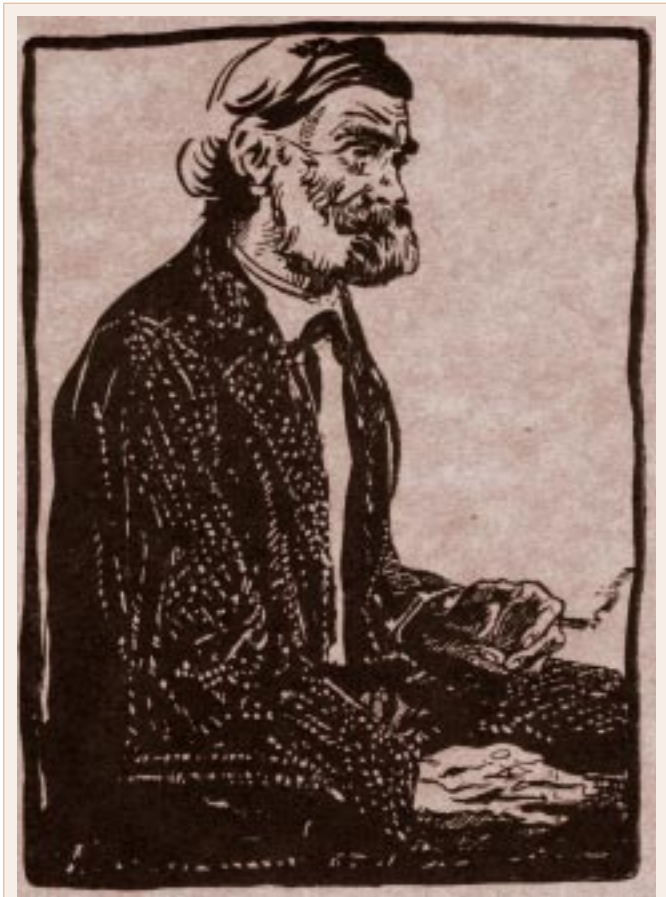
CARNEGIE INSTITUTION OF WASHINGTON. DEPARTMENT OF TERRESTRIAL MAGNETISM. LIBRARY AND ARCHIVES. 5241 BROAD BRANCH ROAD, N. W., WASHINGTON, D.C. 20015, USA. CONTACT: SHAUN HARDY.

Papers of **James Percy Ault, 1881-1929**. Collection dates: 1904-1957. Size: 12.5 linear feet.

Papers of **Louis Agricola Bauer, 1865-1932**. Collection dates: 1892-1939. Size: 2.5 linear feet (6 boxes).



Luis Alvarez with personally built electronics and BF-3 ionization chamber, 1938. Donated by Peter Trower. University of California Lawrence Berkeley National Laboratory, courtesy AIP Emilio Segrè Visual Archives.



Ernst Abbe from Jena Glasindustrie book. Photo courtesy AIP Emilio Segrè Visual Archives.

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

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Ocean Magnetic Survey records of the Carnegie Institution of Washington, Department of Terrestrial Magnetism. Collection dates: 1905-1946. Size: 74 linear feet.

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Papers of **Norman Levi Bowen, 1887-1956**, possibly the greatest petrologist of the 20th century. Collection dates: 1907-1980. Size: 3 linear feet.

Papers of **Hatten Schuyler Yoder, 1921-2003**. Collection dates: ca. 1948-2003. Material is unprocessed. Size: Approx. 70 linear feet.

CASE WESTERN RESERVE UNIVERSITY. ARCHIVES. 10900 EUCLID AVE., CLEVELAND, OH 44106-7229, USA. CONTACT: JILL TATEM.

Papers of **Thomas Keith Glennan, 1905-1995**. Collection dates: 1947-1970. There may be additional unprocessed records in this series. Consult the Archives for availability. Size: 8.4 linear feet.

CORNELL UNIVERSITY. CARL A. KROCH LIBRARY. DIVISION OF RARE AND MANUSCRIPT COLLECTIONS. UNIVERSITY ARCHIVES. 2B CARL A. KROCH LIBRARY, ITHACA, NY 14853, USA. CONTACT: ELAINE ENGST.

Manuscript collection of **André-Marie Ampère, 1775-1836**. Collection dates: 1795-1830. Size: 3 volumes, illustrated; 28 cm. or smaller.

Papers of **Dale R. Corson, 1914-**. Collection dates: 1963-1977. Restricted to permission of the President’s Office until 2007. Size: 134.9 cubic feet.

Papers of **James A. Krumhansl, 1919-2004**. Collection dates: 1943-1990. Collection closed for processing as of Jan. 2005. Contact repository. Size: 11 cubic feet.

Papers of **Robert O. Pohl**. Collection dates: 1973-1998. Size: 27 cubic feet.

HARVARD UNIVERSITY ARCHIVES. PUSEY LIBRARY. CAMBRIDGE, MA 02138. CONTACT: ROBIN McELHENY.

Addition to the papers of **Harvey Brooks, 1915-2004**. Additional materials received in 2004 (Accession #15081; 4 boxes) include subject and correspondence files, 1987-2001 (2 boxes) and course materials, 1990s (2 boxes). These materials are unprocessed and may not be available. Collection dates: 1930s-2001 (inclusive). Size: 99.4 cubic feet. (282 boxes and 1 folder).

LIBRARY OF CONGRESS. MANUSCRIPT DIVISION. JAMES MADISON MEMORIAL BUILDING, FIRST STREET AND INDEPENDENCE AVENUE, S. E., WASHINGTON, DC 20540, USA. CONTACT: DR. LEONARD BRUNO.

Addition to the papers of **Nathaniel Charles Gerson, 1915-** . Collection dates: ca. 1937-2002. Unprocessed. Size: 3,000+ items. (Addition: ca. 1,250 items).

[John Maynard Keynes] tried to convey how new ideas were born. Never did they arrive, he said, with the hard edges that later critics came to attribute to them when trying to define their terms. Ideas were apt to be like fluffy balls of wool with no fixed outline, and the relationship between concepts when first perceived was likely to be equally woolly.

— Alec Cairncross

Papers of **John H. Gibbons, 1929-** . Collection dates: 1970-1998. Size: Ca. 13,000 items.

Addition to papers of **Isidor Isaac Rabi, 1898-1988**. Collection dates: 1917-1985. The collection is not yet processed. CLASSIFIED (in part); access to some of the materials requires security clearance. 37,500 items (25 cartons). Size: Ca. 3,000 items (addition).

Second addition to papers of **Charles H. Townes, 1915-** . Collection dates: 1939-1992. This collection is not processed. Size: Ca. 11,000 items (first addition); ca. 6,000 items (second addition).

MASSACHUSETTS INSTITUTE OF TECHNOLOGY. INSTITUTE ARCHIVES AND SPECIAL COLLECTIONS. M.I.T. LIBRARIES, ROOM 14N-118, CAMBRIDGE, MASS 02139, USA. CONTACT: TOM ROSKO.

Papers of **Arthur Robert von Hippel, 1898-2003**. Collection dates: 1924-1986. There are restrictions on access to this collection. Researchers may request permission to use restricted materials. Consult the Institute Archivist for further information. Retrieval requires advance notice. Size: 1.5 Cubic Feet.

NBC NEWS ARCHIVES. 30 ROCKEFELLER PLAZA, NEW YORK, NY 10112, USA. CONTACT: ARCHIVIST.

Film entitled **Enrico Fermi, Scientist**. Jim Hurlbert conducted this interview. Dated 1952 December 2. Size: 1 film cartridge (44 feet); sound; black & white; 16 mm.

NORTH CAROLINA STATE UNIVERSITY. SPECIAL COLLECTIONS RESEARCH CENTER, NCSU LIBRARIES. BOX 7111, RALEIGH, NC 27695-7111, USA. CONTACT: TODD KOSMERICK.

A guide to the **First Temple of the Atom project documents** (Web site). www.lib.ncsu.edu/archives/etext/engineering/reactor/murray/index.html

UNIVERSITY OF CALIFORNIA, BERKELEY. THE BANCROFT LIBRARY. BERKELEY, CA 94620-6000, USA. CONTACT: DAVID FARRELL.

Papers of **Leonard Benedict Loeb, 1891-1978**. Collection dates: 1928-1977. Included in: History of Science and Technology Collection. Collection stored in part off-site. Advance notice required for use. Size: 31 cartons, 2 boxes.

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Papers of **Alan H. Shapley**. Collection dates: 1948-1964. Size: 2.5 linear feet.

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Papers of **Daniel Alpert, 1917-** . Collection dates: 1941-1998. Size: 6.0 cubic feet.

Papers of **Donald M. Ginsberg**. Collection dates: 1959-1997. Size: 2.6 cubic feet.

UNIVERSITY OF MICHIGAN. BENTLEY HISTORICAL LIBRARY. ANN ARBOR, MICHIGAN 48109-2113, USA. CONTACT: NANCY BARTLETT.

Papers of **Horace Richard Crane, 1907-** . Collection dates: 1897-2000. Size: 2 linear feet. and 1 oversize folder.

UNIVERSITY OF PITTSBURGH. HILLMAN LIBRARY. ARCHIVES OF SCIENTIFIC PHILOSOPHY IN THE TWENTIETH CENTURY. PITTSBURGH, PA 15260, USA. CONTACT: BRIGITTA ARDEN.

Papers of **Wesley C. Salmon, 1925-2001**. Collection dates: 1934-2002 (bulk 1963-2001). Papers are not yet processed and accessible. Size: 33 cubic feet.

INDEPENDENT WEB SITE

Stories of the Development of Large Scale Scientific Computing at Lawrence Livermore National Laboratory. www.computer-history.info (Web site).



Busy reading room, Niels Bohr Library. Photo courtesy AIP Emilio Segrè Visual Archives. See this in color! Visit www.aip.org/history/newsletter/spring2005.

Friends of the Center for History of Physics

We Regret the Passing of Some Good Friends...

Malcolm Brachman (1926-2005), a Friend of the Center for History of Physics since 1987 and member of the Development Committee, was a Texas oil and insurance executive and onetime nuclear physicist. He died Tuesday, January 11, 2005 at his daughter's home in Chapel Hill, N.C. following complications of pancreatic cancer. With 18,000 master points, Malcolm easily qualified as a bridge Life Master – a coveted designation that requires 300 master points earned by placing at tournaments. Malcolm was the first to consider hiring and underwriting competitive bridge teams.

D. Allan Bromley (1926-2005), a Friend of the Center since 1987 and member of the Development Committee, died of a heart attack Feb. 10, 2005 on Yale's campus in New Haven, Conn., shortly after teaching a class. Allan was a nuclear physicist, Yale University professor and an architect of U.S. science policy as science and technology advisor for former President George H. W. Bush from 1989 to 1993. Allan was the first Science Advisor to have this Cabinet-level rank. He received the National Medal of Science, the country's highest scientific award, in 1988,

and also served as president of the American Association for the Advancement of Science. His many books include *A Century of Physics* and *The President's Scientists: Reminiscences of a White House Science Advisor*.

Melba Phillips (1907-2004), a Friend of the Center for many years, died November 8, 2004 after a period of failing health. Melba's long career in physics and education include quite a few notable achievements. In 1933 she became J. Robert Oppenheimer's first graduate student to receive a degree in theoretical physics. Together with Oppenheimer in 1935, Phillips developed the Oppenheimer-Phillips Process, describing the behavior of accelerated deuterons in reactions with other nuclei. Melba's strong stand on scientific and academic freedom and sense of justice and fairness placed her firmly in the camp that opposed the career-ending tactics of MacCarthy in the early 1950s. Melba co-authored textbooks in physics and wrote an extensive history of AAPT. In her retirement she put in many hours editing two popular volumes of reprints of historical articles from *Physics Today*. Please visit our tribute to Melba, who was a member of our Legacy Circle, at www.aip.org/history/historymatters/donors.html.

2004 Annual Fund

We gratefully acknowledge the support of many Friends whose contributions have helped to preserve and make known the history of physics and allied sciences. This list is our public acknowledgment of Friends who have contributed in 2004 to the Center for History of Physics. Leaders contributed \$5,000 or more; Benefactors contributed \$2,500 to \$4,999; Patrons contributed \$1,000 to \$2,499; Sponsors contributed \$500 to \$999; Colleagues contributed \$250 to \$499; Associates contributed \$100 to \$249; and Members up to \$99. Bookplate Donations honor or memorialize a colleague while supporting the purchase or conservation of rare books. Friends-in-Deed donated books, materials, or other services. ★ Designates our Physics Heritage Donors, who have given each year for the past seven years or more. † Designates a recently-deceased donor. If you would like to join the Friends in supporting the Center for History of Physics, please write to us at: One Physics Ellipse, College Park, MD 20740-3843, call 301-209-3141, e-mail chp@aip.org, or visit our Web page at www.aip.org/history/friends.htm.

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