



Oak Ridge National Laboratory; Santa encounters tight security during a wartime visit to Oak Ridge. Many more images recently donated by the Digital Photo Archive, Department of Energy appear on page 13 and through out this newsletter. Credit: Digital Photo Archive, Department of Energy (DOE), courtesy AIP Emilio Segrè Visual Archives

New Gallery Highlights Best of the Emilio Segrè Visual Archives

In January 2008 the Emilio Segrè Visual Archives (ESVA) launched an online gallery featuring 63 of “Our Favorite Photos.” The gallery shows some of the most popular and striking selections from our collection of 30,000 images of physicists and astronomers, revealing their human side and the environments of scientific work. The new gallery (<http://photos.aip.org/favorites.jsp>) includes historical photographs, slides, lithographs, engravings, and other visual materials of many of the best known names in physics and astronomy, including Albert Einstein, Niels Bohr, Marie Curie, Isaac Newton, Richard Feynman and Hans Bethe, along with lesser-known figures. There are striking illustrations of life in science as well as teams, instruments and labs. By

(continued on page 2)

AAS Working Group Acts to Preserve Astronomical Heritage

By Stephen McCluskey

Among the physical sciences, astronomy has a long tradition of constructing centers of teaching and research—in a word, observatories. The heritage of these centers survives in their physical structures and instruments; in the scientific data recorded in their observing logs, photographic plates, and instrumental records of various kinds; and more commonly in the published and unpublished records of astronomers and of the observatories at which they worked. These records have continuing value for both historical and scientific research.

In January 2007 the American Astronomical Society (AAS) formed a working group to develop and disseminate procedures, criteria, and priorities for identifying, designating, and preserving structures, instruments, and records so that they will continue to be available for astronomical and historical research, for the teaching of astronomy, and for outreach to the general public. The scope of this charge is quite broad, encompassing astronomical structures ranging from archaeoastronomical sites to modern observatories; papers of individual astronomers, observatories and professional journals; observing records; and astronomical instruments themselves. Reflecting this wide scope, the members of the working group include historians of astronomy, practicing astronomers and observatory directors, and specialists in astronomical instruments, archives, and archaeology.

The first item on the working group’s agenda was to determine how best to maintain the records of the Society’s journals. Of immediate concern are the extensive and historically important records of the *Astrophysical Journal* from the editorship of Helmut Abt (1974-99), which are presently in temporary storage in Tucson. The Working Group contacted a number of major libraries, many of them actively associated with astronomical research, regarding this collection. To date there has been general agreement on the importance of this collection, but its size and the restrictions placed upon its use by the AAS have made research libraries reluctant to take on the responsibility of managing the collection.

Of immediate concern to working astronomers is the problem of preserving, cataloging, and making available the extensive historical holdings of astronomical photographic plates. Two members of the working group who have previously been active in this area, Elizabeth Griffin and Wayne Osborne, organized a workshop dealing with this issue. As a result of this workshop the working group has recommended the

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(New Gallery Highlights Best of the Visual Archives, continued from page 1)

featuring popular and appealing images from the collection, we hope to stimulate interest in the collection and promote sales. Browse through the site and enjoy the pictures!

We also recently upgraded the photo collection's search engine (<http://photos.aip.org/veritySearch.jsp>), using Verity software, to make it more powerful and efficient. This upgrade is complemented by a new feature on the search page, a "search tips" pop-up box. The tips explain how to use the various ESVA search tools (name search, browse by name, and advanced Verity search). For instance, the **Name Search** is the best way to begin looking broadly for images of specific people and institutions. It is set up so that there is a logical AND between each word in your query. Likewise, you may

not have previously been aware that the **Quick Search** query embedded in our header searches across the "Description," "Date," "Credit," and "Names" catalog fields. It can also search for a precise catalog number, such as *Bohr Niels A1*, if you happen to know it.

We hope these new features will alert researchers and publishers to the depth of the Emilio Segrè Visual Archives. More than 12,000 images are now online with high quality scans available for as little as \$10, and with fees for use in publication running from zero (for limited educational or personal use) to a maximum of \$75, which is considered very reasonable in the industry. We also provide prints suitable for framing at a reasonable cost.

New Dictionary of Scientific Biography: An Expanded Reference Source

by John Ridgen

The 16-volume *Dictionary of Scientific Biography* (DSB), edited by Charles Gillispie, was published over the period 1970 to 1980. Two supplementary volumes were added in 1990. In these eight volumes, world scientists, from the natural philosopher Thales to those 20th-century scientists whose lives extended into the 1980s, are featured. The *DSB* is an indispensable resource for scholars, journalists, writers, and students who need authoritative information about illustrious scientists from the past. This collection of biographies has been rightfully, and accurately, called a monumental achievement.

In early 2008, the *New DSB* (*NDSB*), edited by Noretta Koertge, was published. This 8-volume set builds upon and expands the original *DSB*. Users of the *DSB* will find the appearance of the *NDSB* familiar as its format is the same. The principal purpose of the *NDSB* was to make available biographies of scientists whose lives ended since the late 1980s: scientists such as Richard Feynman (d. 1988), John Bell (d. 1990), Linus Pauling (d. 1994), Abdus Salam (d. 1996), Francis Crick (d. 2004), and Hans Bethe (d. 2006).

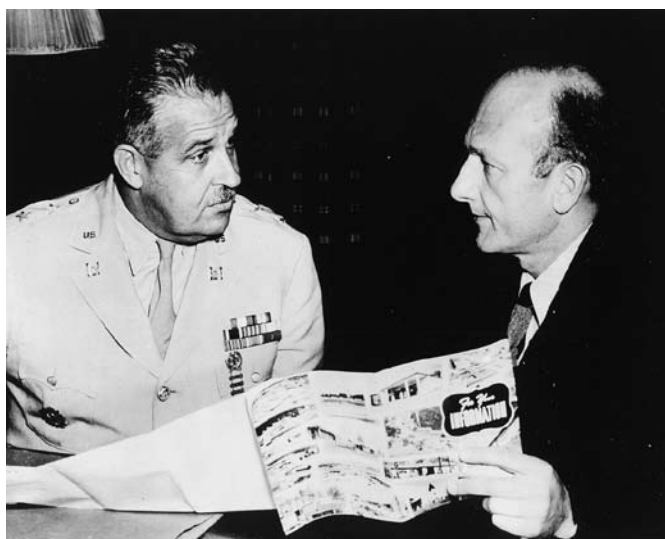
There are 800 new entries in the *NDSB* and that identifies a daunting challenge: how are 800 candidates selected out of the large number of worthy candidates? All candidates were nominated by the Subject Editors who worked under strict boundary conditions. Many selections, like those above, were obvious; some candidates were debated back and forth; arguments were mounted weighing one candidate against another; sometimes a candidate could only be added if another was eliminated and a little horse trading was done. If critics take issue with the end product, it will not be because of those scientists present, but for those absent.

Scholars have been active since the *DSB* was published. The *NDSB* builds on its predecessor by taking advantage of this scholarship. For example, *The Collected Papers of Albert Einstein* started to appear in the late 1980s and the Einstein entry in the *NDSB* is strongly influenced by this resource. Pauli's role in the development of quantum mechanics is better understood now than it was 20 years ago, and an expansion of his biography, along

with a much expanded bibliography, appears in the *NDSB*.

Since the appearance of *DSB*, young sciences such as computer science, space science, ecology, have matured. The *NDSB* includes scientists from these still-young disciplines.

The *DSB* and the *NDSB* are incredibly valuable—and interesting—resources not only for scholars, but for students and those representatives from the general public who are interested in how things came to be. I urge science faculty to call their students' attention to the *DSB* and the *NDSB*. Contemporary science textbooks are largely silent about those names that appear in their pages and silent about how basic concepts came into the mainstream of science. These reference sources will fill a textbook void. The appeal to students (and scholars) will be enhanced when the fully searchable *Complete Dictionary of Scientific Biography* comes online.



Major General Leslie R. Groves CG of the Manhattan Project, War Department, confers with Mr. David E. Lilienthal, new Chairman of the United States Atomic Energy Commission (AEC at Oak Ridge, TN, principal facility of the Manhattan Project on October 1, 1946. Credit: Digital Photo Archives, Department of Energy (DOE), courtesy AIP Emilio Segrè Visual Archives.

(AAS Working Group, continued from page 1)

development of an archive of North American photographic plates at the Pisgah Astronomical Research Institute in North Carolina. As a step toward improving access to these plates, in cooperation with the IAU Task Force on the Preservation and Digitization of Photographic Plates, the working group is conducting a preliminary census of astronomical photographic plates in North America.

An overarching concern of the working group is to investigate the scientific and historical benefits of preserving these elements of the historical record. To meet that role we are encouraging research into the uses of historical data in astronomical research, into the uses of archival materials for historical research, and into the factors contributing to decisions to preserve nineteenth and twentieth century astronomical observatories.

The working group welcomes inquiries and can provide advice about the preservation of existing astronomical materials and records. Further information about the working group and its members can be found on the AAS website at <http://members.aas.org/comms/wgpah.cfm>.

History of Physics in Ireland: Core and Fringe

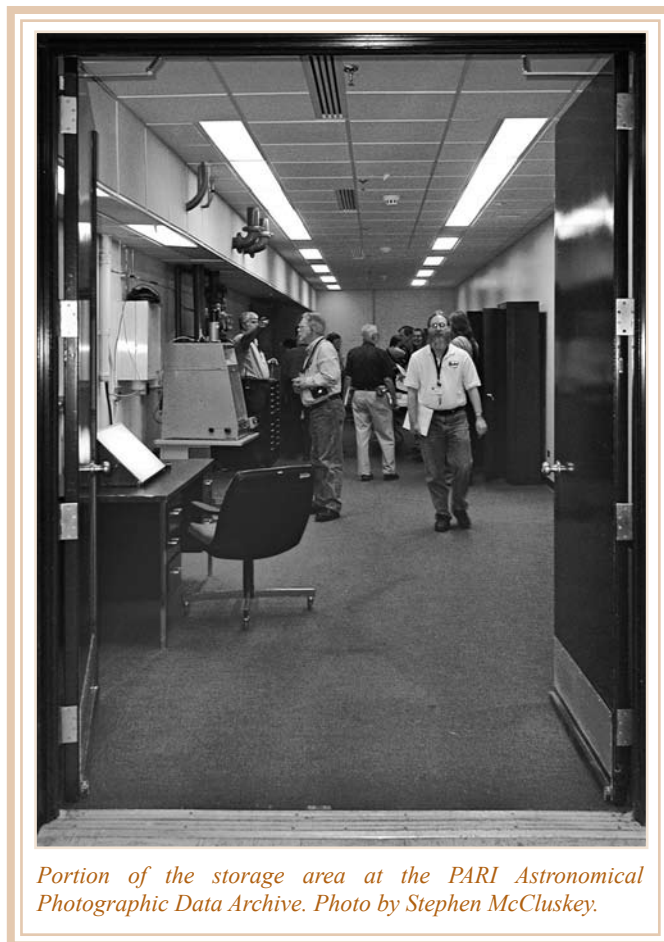
By Roy H. W. Johnston, Techne Associates, Dublin

Historians of science encounter a “core-fringe effect” and a “brain-drain effect” when they work on nations at (or at what is perceived as) the “periphery,” and also nations in transition from colonial status to independence.

In a European context one tends to think of Scandinavia or the Balkans, with the mainstream science action being in Germany, Italy, France, Britain. I have observed the process in Ireland for the past half-century. I was myself part of the brain-drain process (twice). In the 1950s I participated in a creditable attempt to reverse the process by networking the fringe with the core, in connection with the Dublin Institute of Advanced Studies. The Institute was founded by the Irish statesman Éamon de Valera in 1939 as a haven for refugees from Fascism, most famously Erwin Schrödinger.

Those interested in the “core-fringe” and “brain-drain” problems—as important today as ever—can find a good starting-point for studying the Irish case in a recent two-volume publication by Charles Mollan. Issued by the Royal Dublin Society, it is in effect a “Who Was Who” in Irish science over the past four centuries or so.¹ The volumes are a creditable attempt to begin documenting, among other things, the history of the cultural interaction of science with the emergence of the Irish nation. I can explain its scope through a small sampling of the figures in physics and allied fields featured in Mollan’s work.

Scientists of Irish origin, who pursued careers in Ireland and produced notable work in physics, astronomy, geophysics or mathematics include George Berkeley, William and Laurence Parsons (Earls of Rosse), William Rowan Hamilton, and George Francis Fitzgerald. Examples of those



Portion of the storage area at the PARI Astronomical Photographic Data Archive. Photo by Stephen McCluskey.

who had origins abroad but pursued a significant part of their career in Ireland are John Brinkley, George Boole and Schrödinger. Most numerous, however, were scientists of Irish origin who had primarily foreign careers, such as Francis Beaufort, George Gabriel Stokes, John Tyndall, William Thomson (Lord Kelvin), John Desmond Bernal, Kathleen Lonsdale and John Stewart Bell. Joseph Larmor and E.T.S. Walton overlapped these categories, having their origins in Ireland and pursuing their careers both in Ireland and abroad.

I give sketches of these and a few others, selected from Mollan’s 120 biographies, in a more extended review available online at <http://www.iol.ie/~rjtechne/scihist/mollan08.htm>. Mollan gives extensive notes and references, some of which refer to primary source materials in Ireland and elsewhere.

Despite the innovative personal initiative of de Valera with Schrödinger, the Irish government only woke up to the importance of science in the 1960s. The remarkable economic development that has since taken place may perhaps be partly attributed to the setting up of Regional Colleges of Technology in the 1970s. Much more historical analysis will be needed to understand how Ireland has moved closer to becoming a “core” nation itself, a development with much to say for other regions now considered peripheral.

¹ R. Charles Mollan, *It’s Part of What We Are* (Royal Dublin Society, 2007; ISBN 978-0-86027-055-3), 2 Vols; this is the third in a series on science in Ireland. Order forms are available at <http://www.rds.ie/science/publications>.

Yerkes Observatory Records

by Daniel Meyer

The University of Chicago Archives has received more than 500 linear feet of material comprising the historical records of Yerkes Observatory, the astronomical observatory of the University of Chicago, and the papers of several of its leading astronomers. Located in Williams Bay, Wisconsin, Yerkes Observatory opened in 1897 as the joint creation of three founders: William Rainey Harper, the first president of the University of Chicago; Professor George E. Hale, the observatory's first director; and Charles T. Yerkes, a wealthy Chicago businessman who provided funds for the erection of the observatory building. Yerkes became known in the astronomical community as the home of the last of the great refracting telescopes, a 40-inch instrument first exhibited at the World's Columbian Exposition in 1893 and still in operation today with its original mounting and mechanical systems.

(For more history, see the AIP History Center's "Tools of Cosmology" exhibit at <http://www.aip.org/history/cosmology/tools/tools-refractors.htm#hale>.)

The principal set of Yerkes Observatory records are the administrative files of the Office of the Director extending from the 1890s to the 1960s, a period when Yerkes served as the home of the University of Chicago Department of Astronomy and Astrophysics.

The Director's files have been consulted by a series of scholars and researchers including the late Donald Osterbrock (*Yerkes Observatory 1892-1950: The Birth, Near Death, and Resurrection of a Scientific Research Institution*, University of Chicago Press, 1997). The Director's files and associated Director's letterbooks document the careers and scientific work of a notable succession of astronomers associated with Yerkes as faculty members or graduate students, including George E. Hale, Edwin B. Frost, John A. Parkhurst, Edward E. Barnard, Edwin Hubble, George Van Biesbroeck, Otto Struve, Bengt Strömberg, S. Chandrasekhar, William W. Morgan, and Gerard P. Kuiper, among many others.

The administrative records of Yerkes include files on the early decades of the *Astrophysical Journal*, numerous grants and contracts awarded to the observatory, and the work of the optical shop and technical staff. Also preserved are files on the relationship between Yerkes Observatory and the McDonald Observatory of the University of Texas, which operated under contract with the University of Chicago from the 1930s to the 1960s. An extended set of professional papers of William W. Morgan

(1906-1994) contains correspondence, notebooks, observation logs and cards, and journals. Also received were smaller sets of professional papers of Edwin B. Frost (1866-1935), John A. Parkhurst (1861-1925), and Forest R. Moulton (1872-1952). In addition, the Yerkes observation log books, a set of hundreds of chronologically arranged bound volumes, record the systematic observations of Yerkes astronomers from the 1890s onward.

Among the most significant vi-

sual materials in the Yerkes collection are more than 4,800 documentary photographs in a variety of physical formats including negatives, prints, lantern slides, and glass plates. The photographs depict the construction of the main observatory building and the installation of instruments, the work of astronomers and staff, astronomical events including the Sumatra and Catalina Island expeditions, and meetings and visitors at the observatory, among them Albert Einstein. With a grant from the John Crerar Foundation, an initiative has been launched to digitize 2,000 of the Yerkes glass-plate photographs and add them to the University of Chicago Archival Photofiles web site, a digital collection that already contains several hundred images documenting to the founding and history of Yerkes Observatory (<http://photofiles.lib.uchicago.edu>)

For further information please contact Daniel Meyer, Associate Director and University Archivist, Special Collections Research Center, University of Chicago Library specialcollections@lib.uchicago.edu.



Edwin B. Frost, Christian T. Elvey, and Otto Struve examining the F.P.-54 Pirotron tube used to direct light from Arcturus into the photoelectric relay for the opening of Chicago's Century of Progress Exposition, Yerkes Observatory, circa 1916. Archival Photographic Files, Special Collections Research Center, University of Chicago Library.

AIP Marks 10th Anniversary of Grants to Archives

The Center's Grants to Archives program grew out of a challenge that's hard to imagine these days. In mid-1987 the History Center's endowment was producing nearly \$30,000 more in revenue than budgeted, thanks to the dotcom boom. We considered a variety of needs that we could fill with this windfall, and after assessing the archival community's needs as well as our own, we decided to try an experiment—creating a program that would offer individual grants of up to each \$10,000 to process physics and allied science collections. The amount was designed as an incentive and a means for the recipients to raise the additional money needed to process and catalog significant collections—either from their own institution or from outside organizations.

After ten years and 42 grants, we can report that the experiment is a success. The grants meet our need to help preserve and make known the history of modern physics and allied sciences. And it helps other archives process, describe and catalog their important collections in the field so that researchers can use

them. The grants, which require significant matching funds, also encourage recipients to collect more actively in the history of physics by reducing their backlogs of unprocessed collections.

The 42 grants that we've funded to date have helped make a wide range of papers and records accessible to the research community, ranging from a large group of important Russian collections (thanks to the strength of the dollar at the time), to a number of significant resources at smaller archives, along with the papers of major figures like Victor Weisskopf and Murray Gell-Mann at leading science archives. We've also used grants to try to jump-start science collecting at some repositories that don't have a strong track record in the area.

The deadline for Grants to Archives applications is August 1st. For information on the 2008 program, along with links to the grant guidelines and a list of previous recipients, go to http://www.aip.org/history/grants_archives.html.

The one most important thing to realize about science is that it is a human activity... If science is taught with a large admixture of history this point of view will automatically be stressed. In so doing a purpose will be served that is increasingly important in our present day, namely to impart an adequate appreciation of the fundamental conditions under which science flourishes.

—P.W. Bridgman, 1950

Donations Fill Gaps in Niels Bohr Library's Collections

Donations of books to the AIP's Niels Bohr Library have been pouring in at an ever-increasing rate. The volume has occasionally overwhelmed Library staff—one 2007 gift came in 28 cartons—as they work to identify those titles that fill gaps in our collection, catalog them according to international bibliographic standards, and add them to our own online database (searchable on Google and other commercial Websites) and to the OCLC international bibliographic database. Today, however, we've caught up with the processing backlog and are ready for more accessions. Donors have provided an invaluable service in making the book collection perhaps the world's best for its subject areas. At times we have been contacted by researchers who say we have the only copy of a book in the United States, or even the only copy that they can locate anywhere at all.

The collection covers the history of the fields represented by AIP's Member Societies, ranging from physics, astronomy and geophysics to specialized fields like vacuum technology and medical physics. The bulk of the collection is 19th- and 20th-century scientific monographs and textbooks. Unlike nearly every other library in the world, we preserve different editions of translations of textbooks, which scholars have used to trace the evolution of both scientific ideas and how the ideas were taught. Also exceptional are the collections of laboratory manuals, instrument catalogs, and ephemeral pamphlets (for



An image from the booklet Hiroshima and Nagasaki compiled by the Manhattan Engineer District, donated recently to the Niels Bohr Library—one of the many rare items received in the past year; courtesy AIP Emilio Segrè Visual Archives

example, many from the 1920s explaining, or attacking, the theory of relativity). Scholars visiting the Library also welcome the published collections of papers and correspondence as well as secondary works such as biographies and historical studies. The breadth of the collection is largely due to the awareness of physicists and their heirs, as well as college and university librarians, of the Niels Bohr Library's unique status as a repository for historical materials.

Some of our friends have made special efforts to help us. For example, John Layman, Professor Emeritus of Physics and Cur-

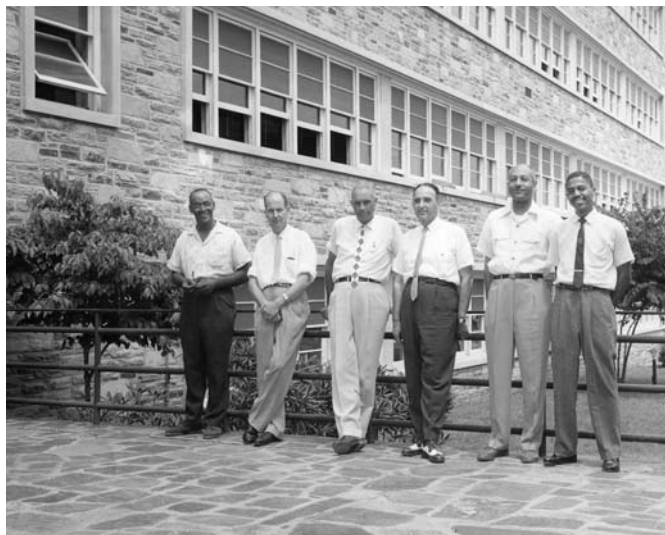
riculum and Instruction at the University of Maryland, working closely with AAPT, conducted a project to recruit donations to fill gaps in our collection of the Science Studies Series. (This series of popular paperbacks was published in the 1960s at the initiative of the Physical Science Study Committee as part of their effort to improve the physics high school curriculum.)

Our astronomy collection has been augmented consistently over the years by David DeVorkin, Curator at the National Air and Space Museum and a bibliophile since his graduate student days. Stephen G. Brush, Distinguished University Professor of the History of Science at the University of Maryland, for many years has contributed to many sections of our collection and has also provided advice on collecting policy. Brush inaugurated the annual listing of new books published in this Newsletter, now maintained as a much-appreciated volunteer contribution by Per and Eleanor Dahl.

As we go through a donated collection, we often find we not only have a particular book but every edition of it as well. The duplicate can be returned to the donor, but most donors let us keep it: we retain whichever copy is in the best condition, and sell the other to a dealer in old science books. The copy thus has a chance of finding an appropriate home, and the money we receive (averaging \$3 a book) is used to purchase additional books.

All purchases are supported entirely by the Friends of the Center for History of Physics through their annual donations and endowments. We have had special help from an endowment established by the Brodsky Family and from individuals making a donation and asking that a book be purchased “in honor of” or “in memory of” another individual.

Donated books are not “free,” for adding them to our collection and making sure they are well-preserved takes considerable staff time and resources. When we receive a donation we must sort



Group of men in front of Holmes Hall, Morgan State University, 1960s. L-R: Julius Taylor, unknown man, George Spaulding, Thomas Fraser, Clarence F. Stephens, and unknown man, circa 1960. Photo courtesy AIP Emilio Segrè Visual Archives, Gift of Julius Taylor.

through the books, check them against our holdings, examine each copy to see if it must be scheduled for physical conservation measures, and create catalog records. For most books a catalog record can be copied from the U.S. National Library database, but not infrequently we find no record and must catalog the item from scratch, uploading the new record to the national database.

At present we are focusing on adding to our collection of geophysics books, an area where we are not as strong as we would like it to be. We look forward to building this, like our other areas, chiefly through the generosity of donors. We anticipate that donations in all areas will increase even more. We speak for many scholars in thanking all who have helped us to preserve these collections.

Original Typescript of Heisenberg’s Uncertainty Paper Discovered

by Guido Bacciagaluppi, Dept. of Philosophy, University of Sydney

The Archive for the History of Quantum Physics, microfilm 28 (H. A. Kramers notes and drafts, 1926-1952), section 6, contains an item described in the catalog to the collections as an “incomplete draft of an unpublished paper on quantum mechanical treatment of a few thought experiments [1928], 20 sheets.” In fact, this is a partial typescript of Heisenberg’s uncertainty paper, with formulas and corrections in Heisenberg’s hand.

The typescript begins on p. 12 (mid-page 181 of the published paper) and is otherwise complete, except for the famous postscript reflecting Heisenberg’s conversations with Bohr of April and May 1927. It can probably be dated between 9 March 1927, when Heisenberg sent Pauli a provisional manuscript of the paper (or even 14 March, when he thanked Pauli for his comments on this manuscript), and 23 March, which is the paper’s date of submission. This version of the paper is essentially the final version, but it is not identical to the published paper.

I am currently preparing for publication (courtesy of the Werner Heisenberg Archive) a compilation of the textual differences between the two versions.

At the time of microfilming, most of the Kramers materials in AHQP microfilm 28 were in the possession of Prof. N. van Kampen. The typescript, however, is not currently among his possessions; I have not yet been able to ascertain its present whereabouts.

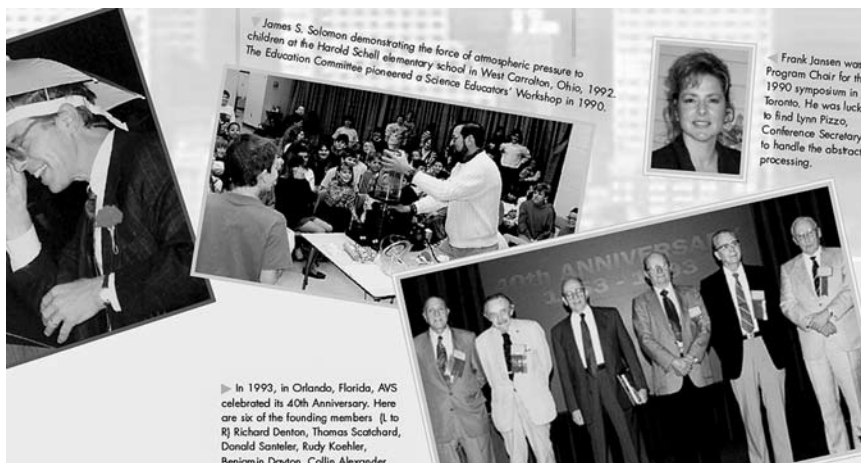


We don't have space for it here, so we invite readers to go to www.dresdencodak.com/cartoons/dc_014.htm and take a look at Aaron Diaz's history-of-physics (sort of) cartoon. © 2006 Aaron S. Diaz, reproduced by permission.

AVS Preserves Historical Materials in Vacuum and Related Technologies

AVS, a society dealing with the science and technology of materials, interfaces and processing (formerly the American Vacuum Society) first formed a History Committee in 1968, but the committee dissolved in 1973. It was revived by action of the AVS Board of Directors in 1986 with the mandate to acquire and store historical books, documents, pictures, and artifacts relevant to the interests of the Society and to ensure the maintenance of its historical records, including the technical memoirs of people who had made major contributions to the related science and technology, such as winners of the major AVS awards. The twelve members of the committee usually have a considerable AVS history of their own. In 2007 their combined terms of membership totalled over 360 years; five members were Past Presidents of AVS.

One major activity began during the 1990s when Jim Lafferty, a former President, began to videotape interviews with winners of the Society's major awards and other individuals who had played a significant role in Society activities or the associated science and technology. To make these available to the public and with the assistance of the AIP Center for History of Physics,



A section of the AVS timeline at www.avs.org/inside.history.aspx

the interviews are being transcribed, edited and mounted on the AVS Web site. Currently about 30 oral histories are available and others are being added. Also available on the Web site is an expanded and revised "Vacuum Timeline" in PowerPoint, showing significant dates, events, people and organizations involved in the development of vacuum technology and related fields over the past five centuries. For deeper study, the Website hosts a comprehensive history of the Society, its Divisions and Chapters. Please visit <http://www.avs.org/inside.history.aspx>.

AVS has an archive of over 6000 photographs of people and events over its history. Original prints of some of these are kept in the AIP's controlled environment, and electronic versions of all photos are available at the AVS office in New York City. Vacuum pumps, gauges and equipment have been collected over the years and are now stored outside New York City; some items have been displayed at past symposia. To make the whole collection available, a "Virtual Museum" project is underway; photos and explanations will be available on the Web site. Old and rare books relevant to the activities of AVS are purchased when possible and are also available for displays. Archival records of the Society are transferred annually to AIP for archival storage, with an electronic index of the contents maintained by the New York office.

Various histories have been prepared over the years to recognize special events, such as the 30th and 40th anniversaries. These have usually been printed but, when AVS celebrated its 50th anniversary in 2003, it was possible to present the comprehensive Web-based history of the Society mentioned above without the costs associated with printing. Special commemorative volumes on the relevant technologies have also been printed: *History of Vacuum Science and Technology* volumes in 1983 and 1993 and a volume of review articles in 2003. The Committee also organizes special sessions at the AVS International Symposium to commemorate special events.

Adapted from the AVS Online History <http://www.avs.org/inside.history.aspx>



William Frederick Meggers seems to be walking on water. Credit: AIP Emilio Segrè Visual Archives, W. F. Meggers Collection.

Recent Publications of Interest

Compiled by Will Thomas

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 index: www.aip.org/history/s-index.htm

To restrict your search to the bibliographies, enter in the box:
[YOUR SEARCH TERM (S)] AND “RECENT PUBLICATIONS”

The last issue of **Historical Studies in the Physical and Biological Sciences**, the supplement to Vol. 37, contains Anja Skaar Jacobsen, “Léon Rosenfeld’s Marxist Defense of Complementarity,” and two related articles by Jeroen van Dongen: “Emil Rupp, Albert Einstein, and the Canal Ray Experiments on Wave-Particle Duality: Scientific Fraud and Theoretical Bias,” and “The Interpretation of the Einstein-Rupp Experiments and Their Influence on the History of Quantum Mechanics.” The journal is now named **Historical Studies in the Natural Sciences**. Vol. 38, No. 1 maintains an interest in physics in John Krige’s “The Peaceful Atom as Political Weapon: Euratom and American Foreign Policy in the Late 1950s,” and in geophysics in Naomi Oreskes, Erik M. Conway and Matthew Shindell, “From Chicken Little to Dr. Pangloss: William Nierenberg, Global Warming, and the Social Deconstruction of Scientific Knowledge.”

In Vol. 38, No. 4 of **Studies in History and Philosophy of Modern Physics**, Gérard G. Emch presents “Models and the Dynamics of Theory-Building in Physics. Part II—Case Studies.” It also contains Roberto Torretti, “The Problem of Time’s Arrow Historico-Critically Reexamined,” Tilman Sauer, “An Einstein Manuscript on the EPR Paradox for Spin Observables,” and Michael Stöltzner’s essay review of *John von Neumann: Selected Letters*, titled “A New Glimpse of John von Neumann’s Thought Laboratory.” Vol. 39, No. 1 brings us Torsten Wilholt, “When Realism Made a Difference: The Constitution of Matter and Its Conceptual Enigmas in Late 19th Century Physics,” Gary Gibbons and Clifford M. Will, “On the Multiple Deaths of Whitehead’s Theory of Gravity,” Mauricio Suárez and Nancy Cartwright, “Theories: Tools Versus Models,” and K.A. Brading and T.A. Ryckman, “Hilbert’s Foundations of Physics: Gravitation and Electromagnetism Within the Axiomatic Method.”

Vol. 9, No. 4 of **Physics in Perspective** features Paul Halpern,

“Klein, Einstein, and Five-Dimensional Unification,” Roland Wittje, “Nuclear Physics in Norway, 1933-1955,” Sara Lippincott, “A Conversation with Valentine L. Telegdi, Part I,” and the Physical Tourist visits Scotland in John Henry, “Physics in Edinburgh: From Napier’s Bones to Higgs’s Boson.”

Archive for History of Exact Sciences, Vol. 62, No. 1 includes Tilman Sauer, “Nova Geminorum 1912 and the Origin of the Idea of Gravitational Lensing.”

The major general science studies journals offer a number of articles of interest on history of physics and allied fields. **Isis**, Vol. 98, No. 3 features Danian Hu, “The Reception of Relativity in China” in a Focus section dedicated to “Science and Modern China.”

The **British Journal for the History of Science**, Vol. 40, No. 3 includes Cristoph Hoffmann, “Constant Differences: Friedrich Wilhelm Bessel, the Concept of the Observer in Early Nineteenth-Century Practical Astronomy and the History of the Personal Equation,” and Christine Macleod and Jennifer Tann, “From Engineer to Scientist: Reinventing Invention in the Watt and Faraday Centenaries, 1919-31.” No. 4 includes Manolis Patiniotis, “Periphery Reassessed: Eugenios Voulgaris Converses with Isaac Newton.” Vol. 41, No. 1 brings Part I of Russell Smith, “Optical Reflection and Mechanical Rebound: The Shift from Analogy to Axiomatization in the Seventeenth Century.”

Vol. 20, No. 4 of **Science in Context** features Koffi Maglo, “Force, Mathematics, and Physics in Newton’s *Principia*: A New Approach to Enduring Issues,” while Vol. 21, No. 1 has Michael Elazar, “Honoré Fabri and the Trojan Horse of Inertia.”

Revisiting his work on gravitational wave physics, Harry Collins inquires about “Mathematical Understanding and the Physical Sciences” in **Studies in History and Philosophy of Science Part A**, Vol. 38, No. 4.

Annals of Science, Vol. 64, No. 4 brings us Helge Kragh and Dominique Lambert “The Context of Discovery: Lemaître and the Origin of the Primeval-Atom Universe.” In Vol. 65, No. 1, Jed Buchwald discusses “Descartes’s Experimental Journey Past the Prism and Through the Invisible World to the Rainbow,” while Galina Granek and Giora Hon present “Searching for Asses, Finding a Kingdom: The Story of the Invention of the Scanning Tunneling Microscope (STM).”

In an issue of **Notes and Records of the Royal Society** dedicated to “Technicians” and guest edited by Rob Iliffe (Vol. 62, No. 1), Jeff Hughes discusses “William Kay, Samuel Devons and Memories of Practice in Rutherford’s Manchester laboratory.”

The recent bout of Majorana-madness continues in **Founda-**

I have repeatedly noticed that what a scientist is typically credited with having discovered often differs significantly from the way in which the scientist himself characterized his work.

—Kenneth Caneva

Documentation Preserved: New Collections

Compiled by Jennifer S. Sullivan

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

Bibliothèque interuniversitaire de la Sorbonne. Department Livre Ancien. 13, rue de la Sorbonne, 75257 Paris, France.

Rapport sur un voyage d'études effectué, en 1912, dans divers observatoires d'Europe. Collection Dates: 1913 April 4. Size: 99 sheets (370 x 230 millimeters), including 90 drawings and photographs. Restrictions: A reader's card is required to use the library; consult repository for details.

Joseph-Louis Trouessart papers. Collection Dates: circa 1850s. Size: 13 volumes (220 x 165 millimeters). Restrictions: A reader's card is required to use the library; consult repository for details.

Institut de France. Bibliothèque. 23 quai de Conti, 75006 Paris, France.

Collection of memoirs and notes presented to the Académie des Sciences. Collection Dates: 1823-1910. Size: 9 folders. Restrictions: New readers must be presented to the director of the library by two members of the Institute belonging to one of the five academies that make up this institution.

Jean Chacornac papers. Collection Dates: 1849-1866. Size: 8 files and 14 notebooks. Restrictions: New readers must be presented to the director of the library by two members of the Institute belonging to one of the five academies that make up this institution.

Boston University. Howard Gotlieb Archival Research Center. 771 Commonwealth Ave., 5th Floor, Boston, MA 02215, USA.

The Mitchell Wilson papers. Collection Dates: circa 1950-1970.

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

Oral history interview with Vladimir Braginsky. Collection Date: 15 January 1997. Transcript: 24 pages.

The California Institute of Technology Astrophysics Archive records. Collection Dates: 1928-1954. Size: 3 linear feet.

Oral history interview with Samuel Epstein. Collection Date: 19 December 1985. Transcript: 82 pages.

Carnegie Institution of Washington. Department of Terrestrial Magnetism. Library and Archives. 5241 Broad Branch Road, NW, Washington, DC 20015, USA.

Carnegie Institution of Washington's Biophysics Program records. Collection Dates: 1931-1969, bulk 1945-1969. Size: 1.25 linear feet, 1 records center carton.

Carnegie Institution of Washington's Ionospheric Section records. Collection Dates: 1927-1959, bulk 1942-1946. Size: 17 linear feet.

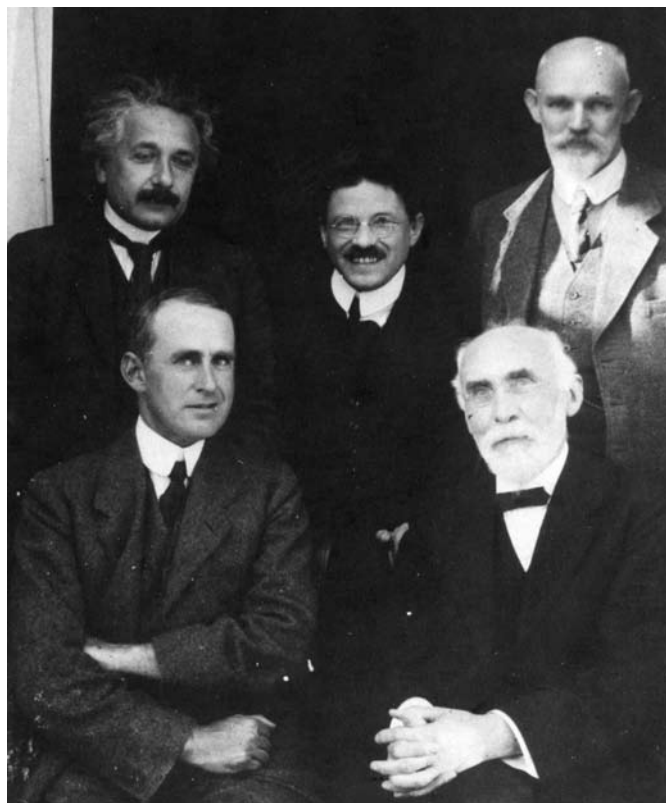
Carnegie Institution of Washington's Radio Astronomy Program records. Collection Dates: 1950-1976, bulk 1953-1960. Size: 6.75 linear feet.

Carnegie Institution of Washington's Section T "Proximity Fuze" records. Collection Dates: 1940-1999 bulk 1941-1943. Size: 12.5 linear feet.

Howard Edwin Tatel papers. Collection Dates: 1924-1960, bulk 1945-1957. Size: 4 linear feet, 3 records center cartons, 1 flat box, 2 map folders.

Carnegie Institution of Washington. Geophysical Laboratory. Library and Archives. 5241 Broad Branch Road, NW, Washington, DC 20015, USA.

Carnegie Institution of Washington's Geophysical Laboratory



Front row: Arthur Eddington and Hendrik Lorentz; back row: Albert Einstein, Paul Ehrenfest and Willem de Sitter at the Leiden Observatory, circa September 1923. Photo courtesy AIP Emilio Segrè Visual Archives

general files. Collection Dates: 1900-present. Size: 35 linear feet, 21 file drawers, 12 map case folders.

Ernest Harry Vestine papers. Collection Dates: 1894-1950 bulk 1942-1947. Size: 4.75 linear feet.

Center for Jewish History. 15 West 16th Street, New York, NY 10011, USA.

Aschner, Joseph F. *The Life and Times of Joseph F. Aschner* (Hietzinger Gymnasium 1932-38). Collection Dates: 1932-1995. Size: 12 pages typescript. Restrictions: Original is closed, use microfilm copy.

Bohm, Henry Victor 1929-Vignettes from my early life. Remembered fifty + years later. Hoary old tales and inaccurate recollections. Collection Dates: 1929-1941. Size: 146 pages typed manuscript. Restrictions: Original is closed, use microfilm copy.

S. Theodor Stein collection. Collection Dates: 1865-1965. Size: 0.25 linear feet.

David Sarnoff Research Center. Library. 201 Washington Road, Princeton, NJ 08540-6449, USA.

James Hillier collection. Collection Dates: 1940-1977. Size: 5 boxes.

Vladimir K. Zworykin collection. Collection Dates: 1929-1976, bulk 1954-1971. Size: 19 cubic feet (16 boxes).

Duke University. Rare Book, Manuscript, and Special Collections Library. P.O. Box 90185, Durham, NC 27708, USA.

Craven-Pegram family papers. Collection Dates: 1785-1966 (bulk 1892-1958). Size: 6,565 items (11.4 linear feet).

Fisk University. Library & Special Collections. Nashville, TN 37208, USA.

Elmer S. Imes papers. Collection Dates: 1902-1942. Restrictions: Contact repository for restriction information.

Georgetown University Library. Special Collections Division. 37th and O Streets, NW, Washington, DC 20057, USA.

Rev. Francis A. Tondorf, S.J., papers. Collection Dates: 1891-1936 (bulk 1910-1929). Size: 1 linear feet (2 boxes).

TRIPLICATE (To be given to declarant) No. 1442
UNITED STATES OF AMERICA
DECLARATION OF INTENTION (Invalid for all purposes seven years after the date hereof)
United States of America In the District Court
District of New Jersey ss: of The United States of Trenton, N. J.
I, Dr. Albert Einstein
now residing at 112 Mercer St., Princeton, New Jersey, N.J.
occupation Professor, aged 56 years, do declare on oath that my personal description is:
Sex Male, color White, complexion Fair, color of eyes Brown
color of hair Grey, height 5 feet 7 inches; weight 175 pounds; visible distinctive marks
race Hebrew; nationality German
I was born in Ulm, Germany on March 14, 1879
I am married. The name of my wife is Elsa
we were married on April 6th, 1917, at Berlin, Germany
she or he was born at Hechingen, Germany on January 18, 1877, entered the United States at New York, N.Y. on June 5, 1935, for permanent residence therein, and now resides at With me I have 2 children, and the name, date and place of birth, and place of residence of each of said children are as follows: Albert born 5-14-1905 and Edward born 6-28-1910 both born and reside in Switzerland
I have not heretofore made a declaration of intention: Number _____, on _____ (Date) at _____ (City or town) my last foreign residence was Bermuda, Great Britain I emigrated to the United States of America from Bermuda, Great Britain my lawful entry for permanent residence in the United States was at New York, N.Y. under the name of Albert Einstein on June 5, 1935 on the vessel SS Queen of Bermuda
I will, before being admitted to citizenship, renounce forever all allegiance and fidelity to any foreign prince, potentate, state, or sovereignty, and particularly, by name, to the prince, potentate, state, or sovereignty of which I may be at the time of admission a citizen or subject; I am not an anarchist; I am not a polygamist nor a believer in the practice of polygamy; and it is my intention in good faith to become a citizen of the United States of America and to reside permanently therein; and I certify that the photograph affixed to the duplicate and triuplicate hereof is a likeness of me: SO HELP ME GOD.
Subscribed and sworn to before me in the office of the Clerk of said Court, at Trenton, N. J. this 15th day of January, anno Domini 1936. Certification No 3-120742 from the Commissioner of Immigration and Naturalization showing the lawful entry of the declarant for permanent residence on the date stated above, has been verified by me. The photograph affixed to the duplicate and triuplicate hereof is a likeness of the declarant.
George T. Cranmer
Clerk of the U. S. District Court.
By [Signature] Deputy Clerk.
Form 2202-L-A U. S. DEPARTMENT OF LABOR IMMIGRATION AND NATURALIZATION SERVICE

Albert Einstein's INS (Immigration and Naturalization Service) declaration upon entering the United States, circa January 15, 1936. Credit: National Archives and Records Administration, courtesy AIP Emilio Segre Visual Archives.

Hoover Institution on War, Revolution and Peace. Archives. Stanford University, Stanford, CA 94305, USA.

Oleg Yadoff papers. Collection Dates: 1946-1952. Size: 1 microfilm reel.

Iowa State University, Parks Library. Department of Special Collections. Ames, IA 50011, USA.

Herbert J. Plagge papers. Collection Dates: 1910-1972. Size: 0.21 linear feet (1 half-document box).

Lowell Observatory. 1400 West Mars Road, Flagstaff, AZ 86001, USA.

Gibson Reaves papers. Collection Dates: 1923-2005. Size: 10 linear feet. Restrictions: Researchers wishing to use the collections of the Lowell Observatory should make an appointment in advance.

E.C. Slipher papers. Collection Dates: 1900-1964. Size:

18.5 linear feet. Restrictions: Researchers wishing to use the collections of the Lowell Observatory should make an appointment in advance.

New York Public Library. Schomburg Center for Research in Black Culture. Manuscripts, Archives and Rare Books Division. 515 East Malcolm X Ave., New York, NY 10037, USA.

Exceptional black scientists collection. Collection Dates: 1971-1986 (bulk 1980-1984) Size: 4 linear feet.

New York University Archives. Elmer Holmes Bobst Library, 70 Washington Square South, New York, NY 10012, USA.

Werner Brandt papers. Collection Dates: 1951-1983 (bulk 1956-1983) Size: 0.75 linear feet.

Princeton University. Archives of the Institute for Advanced Study. 1 Einstein Drive, Princeton, NJ 08540, USA.

John Bahcall papers. Collection Dates: 1961-2005. Size: 24 boxes.

Smith College, Archives. Northampton, MA 01063, USA.

Mary Emma Byrd papers. Collection Dates: 1887-1920. Size: 2.5 linear inches (1 box)

Irvine, William M. Reflections on the Growth of Astronomy at the University of Massachusetts and the Five College Astronomy Department. Size: .25 linear feet.

Richard White papers. Collection Dates: 1974-2000. Size: 4.5 linear feet. Restrictions: The papers are currently not processed and access to the material is restricted until processed. Contact

The Center for History of Physics is pleased to note the publication of *Structures of Scientific Collaboration* by Wesley Shrum, Joel Genuth and Ivan Chompalov (MIT Press, 2007). This is one fruit of the study of multi-institutional scientific collaborations, carried out by the late Joan Warnow-Blewett and others in the 1990s (see reports in earlier issues of this Newsletter). “No one concerned with the life of science as it is lived in multi-institutional collaborations can afford to miss reading it,” according to reviewer Lillian Hoddeson in the *American Scientist* (March-April 2008).

Smith College Archives for more information.

Stanford Linear Accelerator Center. Archives and History Office. 2575 Sand Hill Road, MS 82, Menlo Park, CA 94025, USA.

Wolfgang Panofsky papers. Collection Dates: 1934-2007. Size: 210 linear feet.

Syracuse University. Archives and Records Management. E. S. Bird Library, Syracuse, NY 13244, USA.

Henry Levinstein papers. Collection Dates: 1937-1986 Size: 2 cubic feet.

University of Alaska. Elmer E. Rasmuson Library. Archives, Manuscripts, and Historical Photographs. Fairbanks, AK 99775, USA.

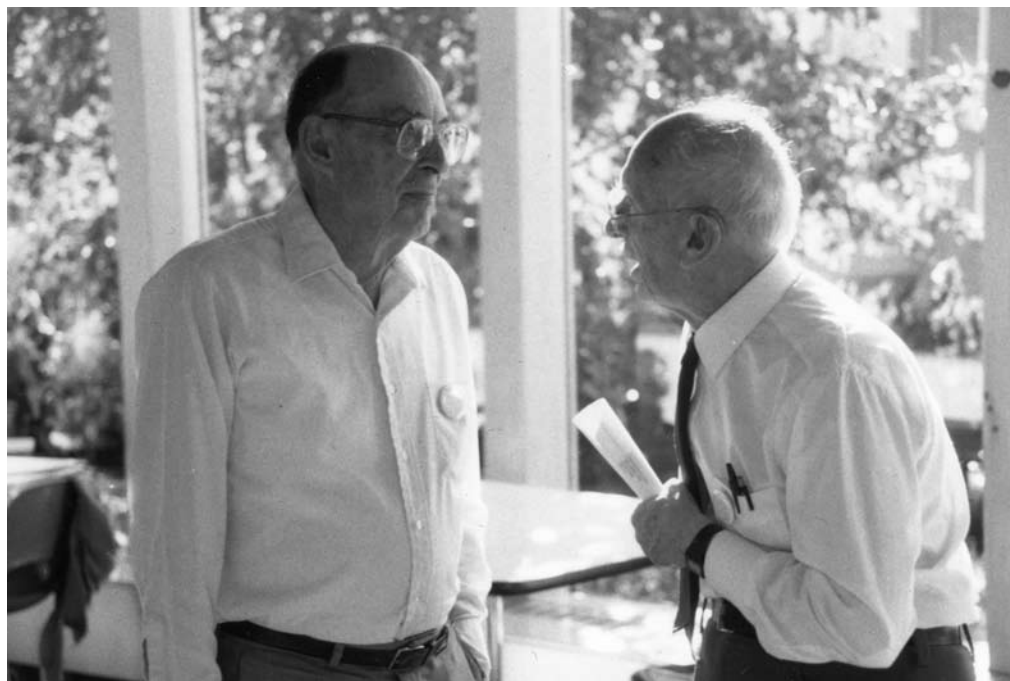
Veryl R. Fuller Papers. Collection Dates: 1931-1936. Size: 1.15 cubic feet.

Stuart L. Seaton papers. Collection Dates: 1944-[ongoing]. Size: 3 cubic feet.

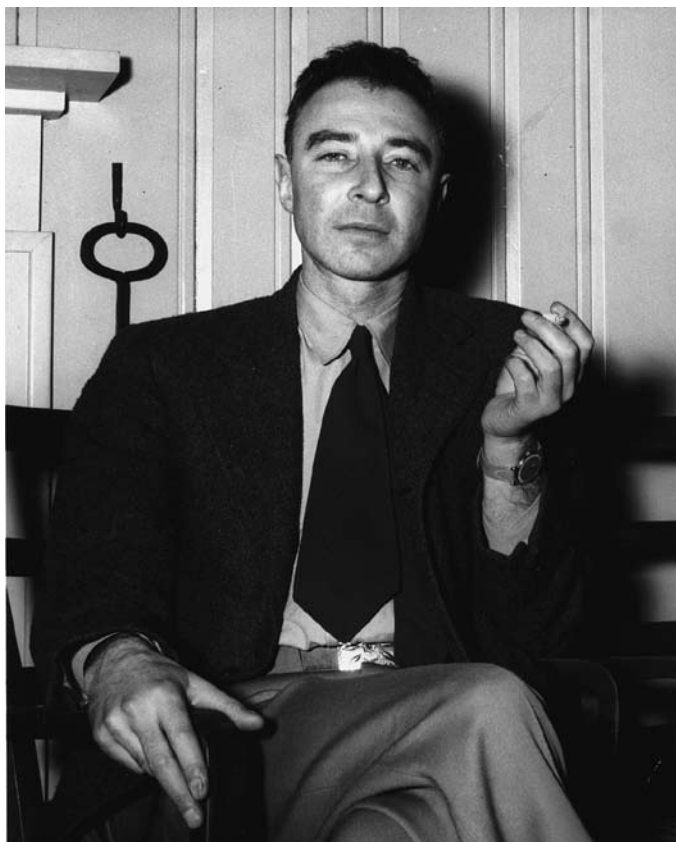
University of California, San Diego. Archives of the Scripps Institution of Oceanography.

University of California, San Diego Mail Code C-075-C La Jolla, CA 92093-0175, USA.

John Bardeen (left) and Paul Beck of the University of Illinois Department of Metallurgy. Credit: Department of Physics, University of Illinois at Urbana-Champaign, courtesy AIP Emilio Segrè Visual Archives.



Emilio Segrè Visual Archives Adds the U.S. Department of Energy's (DOE) Digital Photo Archives to its Collection



Robert J. Oppenheimer at the Guest Lodge, Oak Ridge circa 1946. Credit: Digital Photo Archive, Department of Energy (DOE), courtesy AIP Emilio Segrè Visual Archives.

The Santa photo on page one is one of more than 100 images dating from the era of the Manhattan Project and the Atomic Energy Commission, recently donated to the Emilio Segrè Visual Archives by the U.S. Department of Energy's Digital Photo Archive. See also pages 10 and 14. To see all these images of historic people, equipment, and test sites, visit photos.aip.org and enter "Department of Energy (DOE)" in the Quick Search box at upper right.



First Atomic Energy Commission. L-R: Bacher, Robert Fox; Pike, S. T.; Waymack, William W.; Strauss, Lewis Lichtenstein; Lilienthal, David Eli, (Chairman). Credit: Digital Photo Archives, Department of Energy (DOE), courtesy AIP Emilio Segrè Visual Archives.

Los Alamos National Laboratory; "Jumbo", a 200 ton container, was originally intended to be a part of the Trinity test, but was eliminated in final planning. Credit: Digital Photo Archive, Department of Energy (DOE), courtesy AIP Emilio Segrè Visual Archives.



Frederick H. Fisher papers. Collection Dates: 1937-2005, bulk 1955-2005. Size: 21 cubic feet.

Fred Spiess papers. Collection Dates: 1946-2006, bulk 1954-1997. Size: 61 cubic feet.

University of California, Los Angeles. University Research Library. Department of Special Collections. Los Angeles, CA 90024-1575, USA.

Lawrence Ellsworth Dodd papers. Collection Dates: 1919-1975. Size: 61 linear feet (61 cartons). Restrictions: Open for research. Advance notice required for access. Partially processed collection: Inquiries regarding these materials should be directed, in writing, to the Manuscripts Librarian, UCLA Department of Special Collections.

Joseph Kaplan papers. Collection Dates: circa 1940-1978. Size: 0.5 linear feet (1 manuscript box); 1 oversize box. Restrictions: Advance notice is required for access to the collection.

Alexander Kolin papers. Collection Dates: 1929-1990. Size: 1.5 linear feet (3 document boxes); 1 flat box. Restrictions: Collection stored off site. Open for research. Advance notice required for access.

University of Cincinnati, Libraries. Archives and Rare Books Department. Blegen Library. PO Box 210113, Cincinnati, OH 45221-0113, USA.

Martha Stephens papers: the Cincinnati radiation experiments. Collection Dates: 1960-1972. Size: 5 boxes.

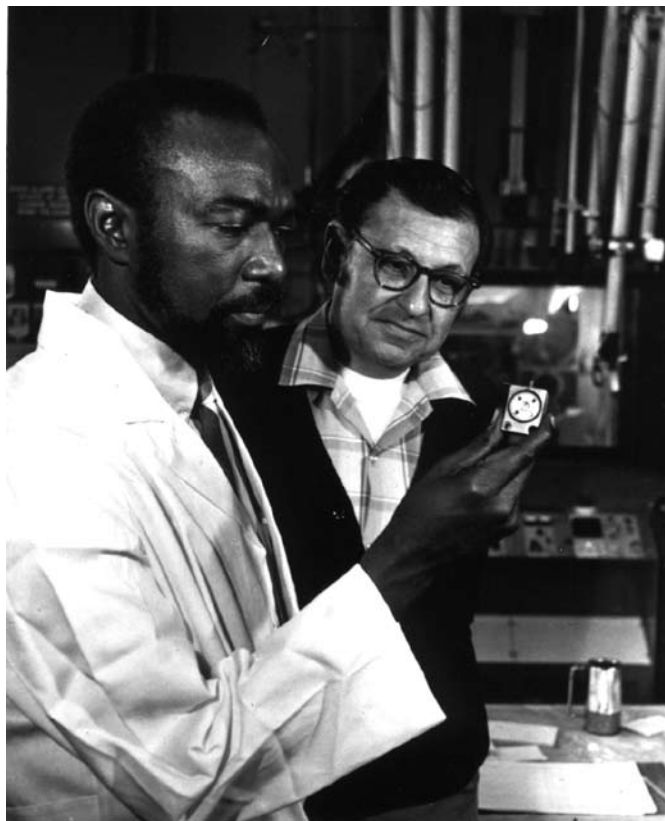
University of Cincinnati Nuclear Research Facility records. Collection Dates: 1960-1963. Size: 7.5 linear feet.

University of Illinois at Urbana-Champaign. University Archives. Room 19, Library, 1408 West Gregory Drive, Urbana, IL 61801, USA.

Richard K. Cook papers. Collection Dates: 1931-1982. Size: 7.0 cubic feet.

Helene R. Dickel papers. Collection Dates: 1963-2005. Size: 3.0 cubic feet.

University of North Carolina at Chapel Hill, Library. Manuscripts Department. Southern Historical Collection.



Nuclear Chemist James Harris (left), and Albert Ghiorso, leader of the research team that discovered elements 105 and 104. Credit: Digital Photo Archive, Department of Energy (DOE), courtesy AIP Emilio Segrè Visual Archives.

Wilson Library CB# 3926, Chapel Hill, NC 27599-3926, USA.

Kirkman family papers. Collection Dates: 1810-1980. Size: 62 linear feet. Restrictions: Copyright is retained by the authors of items in these papers, or their descendents, as stipulated by United States copyright law.

Vanderbilt University. The Jean and Alexander Heard Library. 419 21st Avenue South, Nashville, TN 37240-0007, USA.

Landon Cabell Garland papers. Collection Dates: 1830-1993. Size: 30 cubic feet.

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

—Pierre Duhem

Who Uses the Niels Bohr Library & Archives?

Almost every scholar, science journalist and educator who creates a product explaining the history of modern physics and allied fields takes advantage, indirectly or directly, of the services of AIP's Niels Bohr Library & Archives. Watch almost any television production on the history of our field and at the end you will probably see credits to the photo collection, and often to the staff. Here is a sample of recent books on physics, astronomy, and related public affairs that list the library and archives in their credits.

Some Examples of Recent Works in the Niels Bohr Library & Archives

- Bartusiak, Marcia.** *Through a Universe Darkly: A Cosmic Tale of Ancient Ethers, Dark Matter, and the Fate of the Universe* (New York: Harper Collins), 1993
- Bird, Kai and Martin J. Sherwin.** *American Prometheus: The Triumph and Tragedy of J. Robert Oppenheimer* (New York: Knopf), 2005
- Cassidy, David C.** *J. Robert Oppenheimer and the American Century* (New York: Pi Press), 2005
- Cassidy, David C.** *Uncertainty: The Life and Science of Werner Heisenberg* (New York: W. H. Freeman), 1992
- Cathcart, Brian.** *The Fly in the Cathedral* (New York: Farrar, Straus & Giroux), 2004
- Cline, Barbara Lovett.** *Men Who Made a New Physics: Physicists and Quantum Theory* (Chicago: University of Chicago Press), 1987
- Dahl, Per F.** *Flash of the Cathode Rays. A History of J. J. Thomson's Electron* (Bristol and Philadelphia: Institute of Physics Publishing), 1997
- DeVorkin, David H.** *The American Astronomical Society's First Century* (Washington, DC: The Society), 1999
- DeVorkin, David H.** *Henry Norris Russell. Dean of American Astronomers* (Princeton, NJ: Princeton University Press), 2000
- Falk, Dan.** *Universe on a T-Shirt: The Quest for the Theory of Everything* (Toronto: Viking Canada), 2002 (Photos)
- Finkbeiner, Ann K.** *The Jasons: The Secret History of Science's Postwar Elite* (New York: Viking), 2006
- Galison, Peter.** *How Experiments End* (Chicago & London: University of Chicago Press), 1987
- Galison, Peter.** *Image and Logic. A Material Culture of Micro-physics* (Chicago & London: University of Chicago Press), 1997
- Gleick, James.** *Genius. The Life and Science of Richard Feynman* (New York: Pantheon Books), 1992
- Greenspan, Nancy.** *The End of the Certain World: The Life and Science of Max Born: The Nobel Physicist Who Ignited the Quantum Revolution* (New York: Basic Books), 2005
- Kaiser, David.** *Drawing Theories Apart* (Chicago & London: University of Chicago Press), 2005
- Levenson, Thomas.** *Einstein in Berlin* (New York: Bantam Books), 2003
- Lindley, David.** *Degrees Kelvin. A Tale of Genius, Invention, and Tragedy* (Washington, DC: Joseph Henry Press), 2004
- McCray, W. Patrick.** *Giant Telescopes. Astronomical Ambition and the Promise of Technology* (Cambridge & London: Harvard University Press), 2004
- McMillan, Priscilla J.** *The Ruin of J. Robert Oppenheimer and the Birth of the Modern Arms Race* (New York: Viking), 2005.
- Moore, Kelly.** *Disrupting Science: Social Movements, American Scientists, and the Politics of the Military, 1945-1975* (Princeton: Princeton University Press), 2008.
- Nye, Mary Jo. Blackett.** *Physics, War, and Politics in the Twentieth Century* (Cambridge & London: Harvard University Press), 2004
- Preston, Richard.** *First Light; The Search for the Edge of the Universe* (New York: Atlantic Monthly Press), 1987
- Rhodes, Richard.** *The Making of the Atomic Bomb* (New York: Simon and Schuster), 1985
- Riordan, Michael and Lillian Hoddeson.** *Crystal Fire: The Birth of the Information Age* (New York: Norton), 1997
- Schweber, Silvan S.** *QED and the Men Who Made It: Dyson, Feynman, Schwinger, and Tomonaga* (Princeton: Princeton University Press), 1994
- Seitz, Frederick and Norman G. Einspruch.** *Electronic Genie. The Tangled History of Silicon* (Urbana & Chicago: University of Illinois Press), 1998 (Photos)
- Shrum, Wesley; Joel Genuth; and Ivan Chompalov.** *Structures of Scientific Collaboration* (Cambridge, Massachusetts: MIT Press), 2007.
- Stuewer, Roger H.** *The Compton Effect. Turning Point in Physics* (New York: Science History Publications), 1975
- Thorpe, Charles.** *Oppenheimer. The Tragic Intellect* (Chicago & London: University of Chicago Press), 2006
- Veltman, Martinus.** *Facts and Mysteries in Elementary Particle Physics* (Singapore: World Scientific Publishing Co.), 2003

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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 2007 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. Donors **Highlighted** are first time donors to the Center. 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 301-209-3006, e-mail historyfriends@aip.org, or visit our Web page at www.aip.org/history/historymatters/

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Niels Bohr and grandson Christian Bohr

Frederick Seitz: Scientist, Historian of Physics and Friend of the Center

Frederick Seitz, a renowned solid-state physicist and contributor to the Center for History of Physics, died on March 2, 2008. Seitz served as Chair of the American Institute of Physics (AIP) Governing Board from 1954 to 1960, and received AIP's highest distinction, the Compton Award, in 1970.

Seitz was an active member of the Committee of the Friends of the Center for History of Physics. He helped with fund-raising for many years and was instrumental in helping the Center initiate its first campaign, *History that Matters*, in 2002, with a lead gift from the Richard Lounsbery Foundation. Seitz valued the history of physics and during his years of retirement published several respected books covering aspects of the field: *The Science Matrix*; *Stalin's Captive: Nikolaus Riehl and the Soviet Race for the Bomb* (with Nikolaus Riehl); *Electronic Genie: The Tangled History of Silicon* (with Norman Einspruch); *A Selection of Highlights from the History of the National Academy of Sciences 1863-2005*; and his autobiography, *On the Frontier—My Life in Science*.



F. Seitz as Chair of AIP's Governing Board. Credit: Laura Gilpin, courtesy AIP Emilio Segrè Visual Archives, Physics Today Collection

Frederick Seitz was born in San Francisco on July 4, 1911. He received his bachelor's degree from Stanford University in 1932 and his doctorate in physics at Princeton University in 1934. He taught physics at the University of Rochester (1935-1937), the University of Pennsylvania (1939-1942), and Carnegie Institute of Technology (1942-1949), where he published his landmark textbook, *The Modern Theory of Solids*. Starting in 1949 he worked at the University of Illinois at Urbana-Champaign, serving as Physics Department Head from 1957-1964 and as Dean of the Graduate College and Vice-Chancellor for Research until 1965. Seitz was the first full-time President of the National Academy of Sciences in 1961 and served as President of Rockefeller University from 1968 until he retired in 1978. He received honorary degrees from thirty-four American and foreign universities and colleges.

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Frank Press	Peter Saxby	Lee R. Sorrell	Walter J. Tomasch	James Williams
★ John K. Pribram	★ Roberta P. Saxon	Roger Alan Souter	Carol-Ann Tripp	Paul Williams
Gary H. Price	★ Morton Schagrin	Jesse Southwick	Robert E. Troxler	Jack Willis
Harry J. Przekop	★ John Anthony Schellman	William H. Spangenberg	Zin Tun	D. Keith Wilson
Monroe S. Z. Rabin	Laurance Edward Schlueter	David Spelic	Marc G. Turcotte	★ Donald K. Wilson
Jack Rallo	Arthur G. Schmidt	Martin S. Spergel	★ Frank Turkot	Louis Witten
William P. Raney	Robert Julius Schneider	Helmuth G. Spieler	Seth L. Tuttle	Rachel Wolff
Jorge I. Rangel-Stokes	★ Jack Schneps	Sundar Srinivasan	Blas Pedro Uberuaga	Bryan M. Wong
Jacobo Rapaport	Alan Schoenfeld	Philip A. Stahl	William L. Unger	Tony Hao Wong
R. Ronald Rau	Robert B. Schwartz	★ Robert W. Standley	Zenaida Uy	Roland Carey Woodward, Jr.
★ Richard D. Ray	Frank J. Sciulli	H. Eugene Stanley	Noel E. Van Slyke	David E. Woon
George J. Rayl	Vaughan D. Scott, Jr.	Walter A. Stark, Jr.	William J. Veigele	Robert D. Worley
George Redlinger	Jan V. Sengers	Richard D. Stenerson	★ Ronald J. Versic	Paul Peter Woskov
Antonio Redondo	★ Frederick D. Seward	★ Richard B. Stephens	Daniel Ashley Vincent, Jr.	Przemyslaw Wozniak
Guy Reece	J. H. Shafer	Ionel Stetcu	John A. Vitkevich, Jr.	★ Bradford L. Wright
William P. Reinhardt	Fatemeh Shahedipour	Jeffry Lowell Stevens	Stephan Von Molnar	Carl I. Wunsch
Carl J. Remenyik	K. Shajesh	★ Donald T. Stevenson	James R. Vosteen	Frederick C. Wyse
Jane Repko	Zef Shanfield	James R. Stevenson	James Y. Wada	Sylvia Xeras
John E. Rhoads	Wesley Shanholtzer	Kalmar R. Stevenson	James P. Wade, Jr.	Frank C. Young
J. Ivan Rhode	★ Alan E. Shapiro	Alec T. Stewart	Jack H. Waggoner, Jr.	Glenn Reid Young
Amy C. Richarme	Yitzhak Y. Sharon	★ Ellen Stewart-Kuhns	Kiri L. Wagstaff	Louise G. Young
Michael W. Richmond	Stephen Roger Sharpe	Joan R. Stirling	James R. Walker	Lawrence Younhouse
Stephen L. Richter	James P. Shedlowsky	Alexander J. Stockmal	Michael S. Walker	★ Clyde S. Zaidins
Paul E. Rider	Frank H. Shelton	★ Bertram Strieb	Robert A. Walkling	Richard Zallen
Robert L. Riemer	Harvey K. Shepard	Curtis J. Struck	★ William Wallace	★ Albert Zeller
Corban Riley	Joel F. Sherman	Thomas J. Stuart	★ Carl Walske	★ John W. Zwart
Charles L. Rino	★ Rubby Sherr	Harry Stuckey	★ Peter J. Wanderer, Jr.	Earl Zwicker
Nathalie Rioux	Louis Sica	★ Folden B. Stumpf	Charlotte Ward	Arthur I. Zygielbaum
David J. Ritchie	Philip John Siemens	Raymond W. Suchy	Robert L. Warnock	
Mclouis Robinet	Richard S. Silbergliitt	Matthew C. Sullivan	James Aaron Warren	
Anne E. Robinson	Robert H. Silliman	Richard Swisher	William W. Warren	
Leif J. Robinson	Robert Silver	Kamran H. Syed	Everett M. Washer	
Howard K. Rockstad	Benjamin D. Silverman	Matthew Peter Szudzik	John A. Wass	
Leonard O. Roellig	Donald E. Simanek	Donald B. Tait	Richard V. Waterhouse	
Thomas Dale Rognlien			D. Randolph Watts	
Edward John Rojek			J. Pierce Webb	
Robert Rolewicz			William H.	
Christopher P. Ross				
David E. Roush				
Theodore J. Rowland				

Honors for Vera Rubin and Robert Rubin

In honor of Robert J. Rubin, Vera Rubin has donated the \$7,500 cash portion of her 2008 Richtmyer Memorial Award to the AIP Center for History of Physics. Vera Rubin is a Senior Fellow of the Carnegie Institution of Washington, Department of Terrestrial Magnetism. Her husband Robert Rubin, a mathematician and physicist who worked for 30 years at the old National Bureau of Standards and 10 more years at the National Institutes of Health, died on January 18, 2008, shortly after this award and gift were announced.

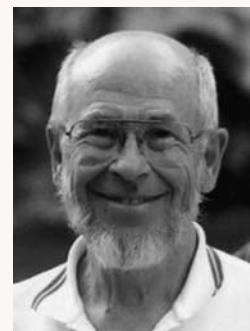


Photo courtesy of Robert Rubin's family.

Through this gift, Vera recognizes and honors Robert's distinguished career and his interest in the history of physics—including service on the Committee of the Friends of the Center for History of Physics. He was known for his mathematical work describing complex physical systems and their evolution over time, crossing the boundaries of traditional disciplines of physics, chemistry and math. "Bob was one of the heroes of those of us of his generation working in statistical mechanics. He was a scientist's scientist and a great gentleman," noted Benjamin Widom, Cornell University. He was a fellow of the American Physical Society and the American Association for the Advancement of Science and a past president of the Philosophical Society of Washington.

The Richtmyer Memorial Award was established in 1941 by the American Association of Physics Teachers, and recognizes outstanding contributions to physics and effectively communicating those contributions to physics educators. Vera Rubin was awarded the Richtmyer Memorial Award in 2008 because of her work as an observational astronomer whose studies of the motions of visible matter in galaxies provided observational evidence of the existence of dark matter. As noted by Ken Heller, Chairman, AAPT Awards Committee, "Two of her early research results, the distribution of galaxies in the universe and the motion of stars in galaxies, opened the door to arguably the most important topics of current physics research, the nature of dark matter and the evolution of the universe."

Other Award and Prize winners who have generously donated the cash portion of their awards to the Center for History of Physics:

Recipient	Name of Prize or Award
Vera C. Rubin.....	2008 Richtmyer Memorial Award
Charles B. Duke	2006 American Physical Society Pake Prize
Mildred S. Dresselhaus.....	2005 Heinz Award, Technology, the Economy and Employment
Allan R. Sandage	2000 Peter Gruber Foundation Prize for Cosmology
Robert L. Gluckstern	1998 U.S. Particle Accelerator School Prize for Research

Bequests—A Powerful Statement for the Future

Leaving a bequest to a charitable organization delivers a strong message of confidence in the organization and commitment to the perpetuation of its programs. Bequests to the Center for History of Physics strengthen its work to preserve and make known our history for future generations. Members of the History Center's Legacy Circle promised a bequest to the Center and agreed to let us list their names as a sign of their commitment. Two bequests were received in 2007:

Anonymous in Memory of P. P. Ewald
Mark McDermott.

Legacy Circle

- | | |
|--|------------------------------|
| <i>Anonymous in Memory of</i>
P. P. Ewald | Elmer & Rose Hutchisson |
| Hans A. Bethe | Mark & Lillian McDermott |
| Marc H. Brodsky | Melba Phillips |
| Morrel H. Cohen | John S. & Diana Rigden |
| Russell J. Donnelly | Ralph A. & Frances H. Sawyer |
| Frank Kelley & Margaret | Emilio & Rosa Segrè |
| Russell Edmondson | Frederick Seitz |
| Clinton B. Ford | John S. Toll |
| Gerald Holton | Charles & Edna Tucker |
| | John A. Wheeler |

Highlight signifies deceased

This *Newsletter* is a biannual publication of the Center for History of Physics, American Institute of Physics, One Physics Ellipse, College Park, MD 20740; phone 301-209-3165; fax 301-209-0882; e-mail chp@aip.org or nbl@aip.org. Editor: Spencer R. Weart. The *Newsletter* reports activities of the Center and Niels Bohr Library, and other information on work in the history of physics and allied fields. Any opinions expressed herein do not necessarily represent the views of the American Institute of Physics or its Member Societies. This *Newsletter* is available on request without charge, but we welcome donations (tax-deductible) to the Friends of the AIP Center for History of Physics (www.aip.org/history/friends.htm). The *Newsletter* is posted on the Web at <http://www.aip.org/history/newsletter/index.html>.

Spencer R. Weart, *Director*; R. Joseph Anderson, *Director, Niels Bohr Library & Archives*; Stephanie Jankowski, *Sr. Administrative Secretary*; Orville R. Butler, *Associate Historian*; Will Thomas, *Associate Historian*; Julie Gass, *Associate Librarian*; Jennifer S. Sullivan, *Assistant Archivist*; Melanie Brown, *Assistant Archivist*; Mark A. Matienzo, *Assistant Archivist*; Barbara Allen, *Senior Library Preservation Assistant*; Nancy Honeyford, *Senior Library Assistant*; Scott Prouty, *Photo Librarian*; Mary Romanelli, *Photo Archives Assistant*; Rachel Carter, *Photo Archives Assistant*; David Kaye, *Production Assistant*.

Center for History of Physics Newsletter

Vol. XL, No. 1

Spring 2008

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