



Pope Pius XII greets Professor and Mrs. Harlow Shapley following the Pope's address to the International Union (IAU) assembly at Castel Gandolfo. Shapley had previously won the Pope Pius XI prize, but had not personally appeared to receive it. 1952. AIP Emilio Segrè Visual Archives, Shapley Collection.

New "Moment of Discovery" Web Exhibit Explores Superconductivity Theory

You are probably familiar with the advertisement that itemizes the high cost of planning a major event and ends "How do theorists make discoveries?" A new Web exhibit by the Center for History of Physics opens a window into the little-understood world of modern physics theorists. Visitors to the Website will find a lively account of the origins of an outstanding discovery—the BCS (Bardeen-Cooper-Schrieffer) theory of superconductivity, published in 1957.

The centerpiece of the exhibit is an interview with Robert Schrieffer, the youngest member of the team. Visitors can read the edited text, listen to voice clips, and view photographs as Schrieffer recalls events in the University of Illinois' "Institute of Retarded Study" (as his fellow grad students named the floor they inhabited in the physics building). He describes the ideas each member of the team contributed, the social interactions that were crucial to their success, and how a breakthrough inspiration came to him on a subway in New York.

(continued on page 2)

The Project to Document the History of Physicists in Industry: Some Notes on Methodology

By Katy Lawley

The Project to Document the History of Physicists in Industry ends this December, and so far this year we've completed the last of the site visits and interviews at industrial labs—at Raytheon in January and Ford in June—and focused on analyzing the 132 interviews that we've conducted along with other information that we've collected. When we planned the study, we decided that individual interviews with physicists, R&D managers, and information professionals (e.g., technical librarians, archivists, and records managers) who work at 15 of the 27 largest employers of physicists in industry would be the best way to capture the experience and perspectives of the participants with as much richness and context as possible.

Business in general has frequently been described as one of the least documented sectors in American society, and sources on the work of corporate physicists are especially rare. So our purpose has been to learn as much as we can about the extent to which these records do exist; how companies treat correspondence (including e-mail), lab notebooks, and other documentary materials of scientists today; the effect of the computer revolution on records keeping; and other information that will help us make informed recommendations on appropriate strategies to identify and preserve vital elements of this virtually unknown history. In addition, because the study provides the opportunity to meet and interview a cross section of physicists at 15 of the country's largest high-tech firms, we have also included questions about career patterns in industry, how R&D is funded and structured, and other questions that will give a better understanding of the nature of industrial physics over the past 25 years.

The kind of interview-based qualitative research that has been the backbone of our study is probably less familiar to most people than quantitative research, which typically relies on statistical surveys and questionnaires of large samples of people. Surveys and questionnaires are excellent instruments for identifying trends and variances distributed over large numbers of people, and the findings are usually presented in terms of percentages of participants who fit into certain predefined categories. Interviews, on the other hand, provide the stories behind the percentages by allowing study participants to describe the context within which they develop their careers, make decisions, and keep records.

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(New “Moment of Discovery Web Exhibit Explores Superconductivity Theory, continued from page 1)

For background and further explanation, the Web site includes a short account of the history of superconductivity theory up to 1957, explained by the noted theorist Charles Slichter (available as both text and voice download). Slichter also provides a lively “dance hall” analogy for the superconductivity mechanism revealed in the BCS theory. The entire story is told in detail in a historical essay by Lillian Hoddeson, Bardeen’s biographer. The Website also offers brief voice clips of Bardeen talking about his first interests in science and superconductivity, suggestions for how teachers can use the materials, and references and links.

The exhibit becomes a new unit within the Center’s popular “Moments of Discovery” exhibit. This already has a unit on the discovery of fission, featuring the voices of many of the pioneers of the 1930s and 1940s, and a unit on the discovery of an optical pulsar, featuring an accidental tape-recording of the voices of the astronomers during the very minutes that they realized they had found what they sought. An associated unit developed in association with PBS, “Transistorized!” explores yet another type of discovery. These three units all include extensive Teachers’ Guides. Please visit <http://www.aip.org/history/mod/>.

Now and then scientists are hampered by believing one of the over-simplified models of science that have been proposed by philosophers from Francis Bacon to Thomas Kuhn and Karl Popper. The best antidote to the philosophy of science is a knowledge of the history of science.

– Steven Weinberg

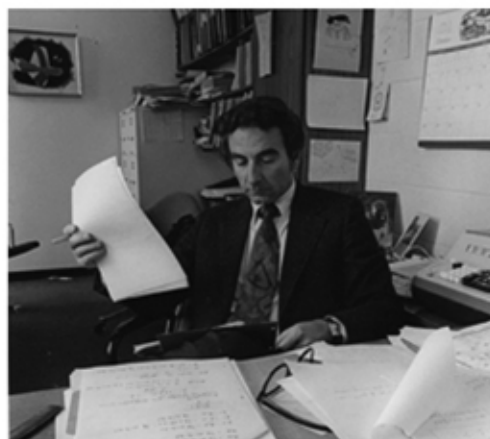
The fission, optical pulsar, and superconductivity units were all prepared in the 1970s by Joan Warnow (later Joan Blewett) and other Center staff and consultants. Tested in high school classrooms, the superconductivity unit proved too difficult to serve as a complete hour-long lesson for students, and it was not developed further. The problem is solved by the Web, with its accessibility to many audiences, each selecting only what interests them. The Schrieffer interview, for example, could be used by itself for a short classroom presentation at high school level. Most of the other materials can be fully understood only by people with some physics background, but they can provide insights to anyone with a serious interest in how theorists actually do their work.

A sample of the New “Moments of Discovery: Superconductivity” Web exhibit. Photos of John Bardeen (left) and Leon Cooper (right) accompany a transcript of J. Robert Schrieffer’s description of the office where they worked.

That seems marvelous! Now — let’s see — John Bardeen and Leon Cooper were in the physics building and you were at the “Institute.” How did you all interact?



Bardeen



Cooper

Bardeen and Cooper shared an office, and that was very important. They could wheel around their chairs and talk to each other continually. But I would come down and say something, to John and then Leon was there and we’d get together into a three way discussion — or if Leon was out, John and I would chat. But it was sort of a round robin where I think John and Leon probably didn’t talk too much more than I chatted, but they were always together — and when they had a question, it would come up and they would discuss it. So, that was a very happy relationship which largely came about because there weren’t enough offices for everyone. They were just squeezed in.

I’d been working on the Brueckner theory, and Leon took very seriously the energy gap aspect and

History of Climate Science Useful for Understanding Current Controversies

by *Spencer Weart*

One of the most popular sections of AIP's Web site is "The Discovery of Global Warming" at www.aip.org/history/climate. It receives nearly 500 visits a day, ranking third after the Center's well-known Albert Einstein and Marie Curie exhibits, although it addresses a radically different audience. Whereas most Center exhibits are aimed at students from elementary school to college, the "Global Warming" site, a collection of extended essays on aspects of the history of climate science, is used primarily by well-informed adults, including many scientists. Whereas the other exhibits are... well, exhibits, with as much space given to images as text, the "Global Warming" site is mainly text (over 250,000 words), extensively footnoted with links to a 1,900-item bibliography. It is thus less like an exhibit than a thick scholarly book.

Unlike the essays in any published book, however, the three dozen Web pages are connected at appropriate points by more than 700 hyperlinks. Thus a reader can quickly check, for example, how a finding in oceanography related to a development in computer models, and how that in turn related to scientists' hypotheses about the rapidity of climate change, and how that connected with popular images of catastrophe. Unlike most books, the Web pages are readily found on leading search engines. And unlike any book, the Web site can easily be revised as often as needed. Originally mounted in 2003, the Web site now incorporates the findings reported in 2007 by the Intergovernmental Panel on Climate Change and other recent developments.

Halfway through three of the essays, a diligent reader will come upon a request to click on a link and fill out a brief survey form. About 3% of those who look at one of these essays not only reach that point but respond. Asked for their occupation, fewer than one-fifth check off "student," but traffic on the site during the periods when students are writing term papers is twice as high as the summertime traffic, so they may be less inclined than adults to respond to the survey. Many respondents identify themselves just as "concerned citizen" or the like. Other occupations reported ranged from energy-company publicist to environmental activist, as well as lawyer, farmer and "unemployed, mentally ill." However, the most common occupation reported was scientist—a group that should indeed be the primary audience for history of science. Only a minority of those were climate scientists. Engineers and teachers are also common among the visitors.

The great majority of the respondents, whether scientists or not, said they were drawn to the site by the current controversy over climate policy. Most wanted to inform themselves about the current state of climate science. Many of these were trying to form an opinion of their own about global warming; many others had already made up their mind, and were looking for ammunition for their debates with others. Some visitors said they had come in search of specific information, and indeed our tracking software shows a significant fraction of visitors

were referred to the site by search-engine results for technical terms. These visitors may not have found the detailed data they sought, but many were drawn into reading the history anyway. After all, one reason for reading any history is to gain a deeper insight into current concerns.

A very large majority of the survey respondents said the Web site was giving them part or all of what they had come to find. Typical comments: "It's nice to know some history to put it in perspective." "Helps me understand the nuances of what is usually treated in mass media in an extremely broad and unintelligent fashion." "Your history seems that it might provide a way of building confidence in who to believe is on the right track, without politicizing the subject." "Teaching the subject historically helps students to understand how and why apparently matter-of-fact questions have been the subject of so much uncertainty and controversy." "It helps to gain more appreciation of the science if one has a sense of the history of it."

Historians of science should be encouraged by such comments, which reflect just what we hope to achieve. There is evidently a large population that can be reached on the Web (and often only there) who can benefit from historians' work.

In science education, the historical approach can no longer be considered just a distraction that takes time away from learning "real science."
— *Stephen Brush*

Collections of Niels Bohr Library & Archives Enriched by Numerous Donations

Although the Niels Bohr Library & Archives is a medium-sized institution and restricted to modern physics and allied fields, it receives a rich variety of historical source materials. Our staff, and interns in archival studies at the nearby University of Maryland, acquire experience in almost every type of item that is found at even the largest archives covering very broad subject areas. Again this year we received items that span a remarkable range both in their physical character and in the human activities that they record.

Books

It is donations that make the collection at the Niels Bohr Library both unique and deep, the world's best in its highly specialized areas. This year was no exception with its many generous donations along with some surprises. We were especially pleased to receive a 1st edition copy of *Geographia Generalis* published in 1650 from **Thomas W. Sills** (see page 8.)

Noted historian of physics **Stephen Brush**, who recently retired after many years of service at the University of Maryland and moved from his office, worked with the Library to make sure we had our pick of books from a lengthy list he offered us

Enriched by Numerous Donations, continued on page 5)

Leibniz Societät Supports History of Science

By Wilfried Schröder, Geophysical Institute,
Bremen-Rönnebeck

Leibniz Societät was founded in 1993 as a consequence of the termination of the German Academy of Sciences (Akademie der Wissenschaften der DDR), the leading scientific body in the former German Democratic Republic. The Academy was founded in 1946 as successor of the Prussian Academy of Sciences, which included many leading scientists (e.g., Heisenberg, Born, von Laue, etc.) as members. In 1991 following the unification of Germany, the Academy was closed. Former members founded the Leibniz Societät as a successor in the tradition of the founding in 1700 of the Brandenburgische Sozietät der Wissenschaften by Gottfried Wilhelm Leibniz. In the years following 1993 the membership grew, and now more than 300 scientists from all over the world are members in different classes.

One aim of the Societät is to support history of science, and over the years many interesting conferences have been held. Commemorations were held for the 300th anniversary of the Berlin Academy of Sciences in 2000, the 75th birthday of the internationally known physicist Hans-Jürgen Treder in 2003, and in 2004 the 100th birthday of the leading meteorologist and hydrodynamicist Hans Ertel (known for the Ertel Potential Vorticity). In 2004 the results of a international conference on Immanuel Kant were published, followed more recently by a collection of papers on the history of the Berlin Academy. A well-attended conference was held in 2005 on Albert Einstein in Berlin, with lectures by leading scientists.

The Societät publishes Sitzungsberichte and Abhandlungen through the Trafo Verlag, Berlin. Current reports on work are available in the journal Leibniz-Intern. More details on the work and publications of the Leibniz Societät are available on the Web at www.leibniz-sozietat.de.



Elena Bonner, Sakharov's wife (left); and Andrei Sakhorov in Moscow. September 1979. Photograph by Jeri Laber, U.S. Helsinki Watch, courtesy AIP Emilio Segrè Visual Archives, Physics Today Collection.

Document History of Physicists in Industry: *continued from page 1*

Broadly, qualitative research describes inquiry into perspectives, processes, and themes. Quantitative research, in contrast, describes inquiry into trends and variances from those trends. Because these two complementary research approaches espouse fundamentally different goals, their underlying assumptions, data collection methods, analysis procedures, validity checks, and outcomes differ quite markedly from each other. These differences do not necessarily mean that qualitative and quantitative research methods are incompatible with each other, or that one tradition delivers “truer” results than the other. Rather, the nature of the underlying research question – the impetus of the research project – should dictate which methodology is most germane.

We prepared for the study by conducting an initial mail survey of information professionals at approximately 40 high-tech companies. The results were inconclusive,

Physicists in Industry: Field Work Winds Up



The AIP History Center's study of the History of Physicists in Industry has just completed its last major site visit. The photo shows Orville Butler (left) and Joe Anderson leaving the Ford Research and Innovation Center in Detroit. Since 2003, the AIP History Center's professional staff has visited industrial R&D labs at 15 of the largest high-tech companies in the U.S., conducting 132 interviews with physicists, R&D managers and information professionals.

They also visited archives that preserve industrial records in this country, the U.K. and Germany, and conducted career-length interviews with 14 high profile corporate physicists.

The History Center staff is loading interview transcripts into NVivo, a software that helps analyze the data. The study should offer a new understanding of career patterns, organizational structure, and research trends in contemporary corporate physics, as well as help from strategies for preserving the records that document the still largely hidden history of this important field.

however, and the qualitative approach that we've employed in the study has allowed us to start out with broad research questions like "What kinds of company policies and procedures affect the maintenance and completeness of lab-notebooks?" We suspected that each company's policies would differ from each other, and these broad questions have allowed study participants to provide thorough and individualized answers.

Fortunately and coincidentally in 2006, AIP's Statistical Research Center conducted an Industrial Membership Survey for the American Physical Society. The survey instrument was sent to 2,700 APS members in the U.S. with private company addresses, and 1,200 people responded. Some of the questions, including those dealing with application of physics knowledge on the job, favorite information sources, and networking styles, overlap with some of the themes of our interviews.

We described some of our preliminary findings in this newsletter in the Fall 2006 issue www.aip.org/history/newsletter/spring2007/, and we are now analyzing the thousands of pages of interview transcripts in Nvivo, a qualitative analysis software that allows us to create a hierarchically arranged catalog of the major and minor concepts and themes that showed up across our data set. NVivo's query tools then allow us to filter and navigate these concepts according to company, industry sector, or interviewee characteristics. We will also compare the results of our findings with the APS survey responses, all of which should provide a solid basis for our recommendations and report. Our more interesting findings include the extent to which companies are grappling with problems in the conversion from a paper to an electronics based records system.

While no company thinks it has resolved all the problems, several have developed innovative programs which others may find useful. Project Staff will present papers on our analysis-to-date at the annual meeting of the Society for the History of Technology in mid-October and will complete and circulate a draft report for comment by the end of the year.

Concerned to reconstruct past ideas, historians must approach the generation that held them as the anthropologist approaches an alien culture. They must, that is, be prepared at the start to find that the natives speak a different language and map experience into different categories from those they themselves bring from home.

– Thomas Kuhn

Enriched by Numerous Donations, *continued from page 3*

from his important personal collection. **Bernard Khoury** also donated books from his private library.

Our older friends will remember the Anchor Science Studies Series, an important publishing effort in the 1960s that provided well-written paperbacks for students, teachers and others interested in the sciences. **John Layman** organized a project to help the Library fill gaps in our collection. He was kind enough to evaluate what we had and actively recruit donations. This project not only helped us to make our collection of the series nearly complete for physics, astronomy and geophysics, but also replaced copies that were already in our collection but in disrepair.

J.D. Maynard donated several interesting old books from his own collection, including *Electricity* by **W.L. Bragg**, *New Fragments* by **John Tyndall**, *The Outlines of Physics* by **E.L. Nichols**, and *A Text-Book of Physics: Sound* by **J.H. Poynting** and **J.J. Thomson**; **Karen M. Albert** of the Talbot Research Library donated *Sound: A Course of Eight Lectures Delivered at the Royal Institution of Great Britain* by **John Tyndall**.

Nathalie and **Dorothea Cvijanovich** donated the books of their late father and husband **George Cvijanovich**, adding no less than 131 books to our collection. **Ethan Alyea** contributed 13 books to our collection, and from **Gisela Goldstein** on behalf of her late husband **Herbert Goldstein** (author of the textbook on mechanics familiar to countless physics students) we added 9 books to the library. The library received 16 books from **Craig Walker** on behalf of his father, the late **Robert L. Walker**. Finally, we are grateful for books donated by **Gerald Holton**, **John Krige**, **Elroy O. LaCasce** and **Albert Parr**, all have made other welcome contributions over the years.

Emilio Segrè Visual Archives

We now have about 11,000 images available online at <http://photos.aip.org>. That is just over a third of the collection, and we are digitizing a couple of hundred more photos every month. Many of the donations we received this year are now online, including images we are grateful to have received from **Neil Baggett**, **Donald D. Clayton**, **Juliet Demeter** (Bancroft Library), **Charles Duke**, **Ken Ford**, **Shaun Hardy** (Carnegie Institution of Washington), **Gerald Holton** (Harvard University), **Andrew Lenard**, **Gerald Liddel**, **Peter Lesser** (Brooklyn College), **Jan Sengers** (University of Maryland), **Donat Wentzel** (University of Maryland), **Alan White**, and **Robert M. White** (Carnegie Mellon University).

In a major donation, **Celia Elliott** gave over 1,500 images from the collection of the University of Illinois at Urbana-Champaign Physics Department (see page 7.) Nobel laureates **John Mather** (NASA) and **George F. Smoot III** (Lawrence Berkeley National Lab) donated photographs of themselves at our request, and so did new AIP Member Society Presidents **Gilles Daigle**, **Joseph Eberly**, **Kenneth Heller**, **Harvey S. Leff**, **Mary Martel** and **A. Alan Pinkerton**. We also thank those who donated photographs to us through the Physics Today obituary office.

Philadelphia Area Center for History of Science Launches Cooperative Programs

For many years the AIP Center for History of Physics has sponsored a three-year post-doctoral fellow on its staff. Center postdocs have all gone on to productive careers at universities or research and cultural institutions. The Center's most recent postdoc, Babak Ashrafi, has been selected to lead a new venture that will undertake for the history of science, technology and medicine—broadly conceived—in its region many activities similar to those that the Center for History of Physics has undertaken in its fields.

In April 2007 Ashrafi became the first Executive Director of the Philadelphia Area Center for History of Science (PACHS). A consortium of cultural and educational institutions founded PACHS in 2006 to create a hub for the study of history of science, technology and medicine, and to build broader audiences for these topics using traditional and new media. In pursuance of this mission, PACHS is establishing a fellowship program for scholars to conduct research in area archives; an events program including public forums and academic conferences; and a website with resources and events for researchers, teachers and learners.

PACHS is a consortium of the Academy of Natural Sciences, the American Philosophical Society, the Chemical Heritage Foundation, the College of Physicians of Philadelphia, the Franklin Institute, the Hagley Museum and Library, the

Historical Society of Pennsylvania, the Library Company of Philadelphia, Princeton University, the University of Pennsylvania, and the Wagner Free Institute of Science. These institutions hold rich collections with millions of manuscript items, printed volumes and artifacts of interest to historians of technology, medicine and science.

The fellowship program will bring internationally recognized scholars, promising young researchers and dissertation students to Philadelphia to participate in PACHS academic and public programming while they conduct research in the area's exceptionally rich archival resources. In addition to events for scholars, PACHS will make a special effort to offer events that will engage teachers, students and other members of a broader audience. Online events will include streaming video of live events, interactive forums, debates, and interviews that will bring together scholars, students, teachers and learners of all ages. PACHS will produce web exhibits similar to those of the AIP History Center, and a cross-institutional search based on the History Center's cross-collection search that Ashrafi helped to develop while he was at AIP.

Since several of the members of the PACHS consortium hold important collections in history of physics, PACHS and the AIP look forward to working together to promote scholarly and public understanding of history of physics.

Oral History Interviews

This year staff on the History of Physics in Industry completed the last of their interviews designed to get specific information about structures and documentation in modern industrial labs. After transcription and editing, the information in the interviews is being categorized with software adapted for social science investigations (see p. 4). Meanwhile we continued to commission interviews covering more broadly the biographies of particularly distinguished industrial physicists. Sheldon Hochheiser interviewed **Tom Anthony** and completed his interview with **William Brinkmann**, while Babak Ashrafi interviewed **Dan Nolan, Charles Duke and Esther Conwell**.

Project staff Joe Anderson and Orville Butler interviewed **Mark Baldwin, Dan Flatin, Jeff Holly, Jim King, Taylor W. Lawrence, Doug McKay, Don Power, Mark Russell, Linda Wagner and Colin Whelan** at Raytheon in Tewksbury, MA. Butler interviewed **Ed Eckert** at Lucent Archives in Murray Hill, NJ and **George Kupczak** at AT&T Archives in Warren, NJ.

Anderson and Butler interviewed **Ingmar Ackermann, Elizabeth Adkins, Lee Feldkamp, John Ginder, Leanna Kudla, Gint Puskorius, Gerhard Schmidt, Paul Stieg and Mike Tamor** at the Ford Research and Innovation Center in Dearborn, MI.

Bill Westwood sent us a significant collection of AVS Video In-

terviews on 25 DVDs with an average of five interviews on each. So far we have transcribed 20 of them. Meanwhile, **Paul H. Hol-loway** sent four interviews conducted at the 2006 AVS International Symposium in San Francisco: **Mark Hersam** (Perer Mark Award), **Siegfried Hofmann** (Nerken Award), **John Hemminger** (Welch Award) and **Len Brillson** (Gaede-Langmuir Award).

The Acoustical Society of America sent us for processing and archiving interviews of **Warren E. Blazier, Jr.** by Richard J. Peppin, **Edwin L. Carstensen** by David T. Blackstock, **Ira Dyer** by William J. Cavanaugh, the late **Isadore Rudnick** by Steven Garrett, **Manfred Schroeder** by Gerhard M. Sessler, and **Henning E. Von Gierke** by Lawrence S. Finegold.

In addition, we received interviews of **Murray Strasberg** by David Feit, **Edward A. Frieman** interviewed by Kai-Henrik Barth, and **George Preston** by Patrick McCray.

In scientific research, where ideas form and dissolve in a state of flux and at any moment present countless potential futures, scientists retain their bearings by contrasting past and present ideas. Awareness of temporal depth in science forms an integral part of scientific research.

—Edward Harrison

Illinois Physics Department Donates Photo Collection

The University of Illinois at Urbana-Champaign (UIUC) has had a top-notch physics department since the 1920s. Recently the Emilio Segré Visual Archives has received an outstanding collection of photographs from the Physics Department of the University of Illinois at Urbana-Champaign. With the understanding that AIP's efficient system will make the photos widely accessible, Celia Elliott, the department's Director of External Affairs and Special Projects, transferred approximately 1,500 photos showing many distinguished physicists who have taught, studied, or visited there.

The collection contains photos of such notable physicists as John Bardeen, Frederick Seitz, Hans Frauenfelder and many others. We are currently cataloging the collection and placing scans online. We now have more than 10,000 photos online, for sale at cost.



Above: Rosalyn Yalow with graduate students at the University of Illinois, Urbana-Champaign Physics Department. Circa 1970s.



It is of great advantage to the student of any subject to read the original memoirs on that subject, for science is always most completely assimilated when it is in the nascent state.

— James Clerk Maxwell



Top: Daniel Alpert, Downhill Skiing Urbana-Champaign Physics Department.

Middle Right: is a photo of the First Mossbauer Conference, June 6-7, 1960, University of Illinois. Front row L-R: Rudolf Mossbauer; Robert Pound; Anatole Abragam; Back Row L-R: Max Swerdlow; Hans Frauenfelder; Chien-shiung Wu.

Left: Hans Frauenfelder speaking with Hans Bethe at a University of Illinois, Urbana-Champaign Physics Department function.

Manuscript Collections

The Niels Bohr Library & Archives is especially dedicated to serving the AIP member societies, and received many additions to the archives since our September 2006 report. The **American Physical Society** completed an initiative to digitize the **APS constitution and by-laws, membership lists (1902-1948), APS Council meeting minutes (1940-1976) and Executive Committee minutes (1967-1972), and combined Executive Committee and Council minutes (1973-2003)**. Thanks to modern technology, all of these files could fit onto a single data DVD, donated by **Ken Cole** of APS. **Ron Ruth and Ernie Malamud**, also of APS, donated the records of the **APS Division of Physics of Beams** (1.75 linear feet) containing meeting minutes and correspondence, as well as the files of the **APS Committee on Applications of Physics** (0.25 linear feet). The **Society of Rheology** sent its annual addition to our archives, with the **program and abstracts of the Society of Rheology 78th Annual Meeting** (1 folder). The AVS sent a shipment (3 linear feet) of CDs, photographs and audio records to add to its current holdings in the archives. **Folden B. Stumpf** (Physics, Ohio University), of the American Association of Physics Teachers Appalachian Section, updated that section's records to include a **brief history of the AAPT Appalachian Section and various membership lists**.

We also received several additions to collections already in the archives: programs and abstracts from the **2007 Joint Magnetism and Magnetic Materials/INTERNATIONAL MAGNETICS conference** (1 folder); files of the **2007 Gravity Research Foundation Essay Contest** (0.5 linear feet); taped proceedings, abstracts and agenda from the **18th Annual International Conference on Optical Fiber Sensors** (5 CDs); and small additions to the **Nancy Grace Roman papers** (1 linear foot) and the **Melba Phillips papers** (1 linear foot).

Miscellaneous Physics Collections

We often receive general biographical data (vitae, lists of publications, photographs, clippings) from physicists, which are added to our extensive biographical files. This year we added an unusually large number of such useful and basic historical data, thanks to appeals by **Virginia Trimble** with the help of the APS Forum on History of Physics.

We also received and cataloged more lengthy unpublished memoirs and historical accounts, including: a **history of the University of Hawaii Institute for Astronomy** by **John T. Jefferies**; booklets on the history of the **Hopkins Observatory at Williams College**, sent to us by **Jay Pasachoff**, Williams College Department of Astronomy; **Charles P. Sonett** sent us his manuscript, "*A Walk in Space: Recollections*" by **Charles Sonett**"; **Winifred Sillitto**, widow of **Dick Sillitto**, sent us a manuscript titled "*Dick Sillitto's involvement with physics*"; a short biography of **Ludwig Biermann**, written and donated by **Helmut Abt**; **Lawrence Cranberg** sent a copy of an autobiographical account written by **Edward Pickels**, inventor of the vacuum ultracentrifuge; **Charles B. Duke** sent us his **autobiographical account** from his days at Princeton in 1959 to his retirement in 2006; and **Andrew Sessler** donated a copy

of his **biographical memoir on Edward Teller**, written with **Stephen Libby**.

Donations of single manuscripts and smaller collections are added to our growing Miscellaneous Physics collection, while tape or digital recordings become part of our Audiovisual collection. New additions to these collections include: 6 books of notes from lectures by **Murray Gell-Mann, R.L. Walker, and W.A. Fowler**, received as part of book donation by **Ethan D. Alyea, Jr.**; "Discovery and creativity in science," **recording of a presentation by Charles Townes**, UC Berkeley (1 DVD); a recording titled "**Physics colloquium: celebration in honor of the 100th birthday of Laszlo Tisza**," donated by **Dan Kleppner**; a film reel showing **mode patterns generated by the 6328 Angstrom gas laser developed by Alan White and John Rigden** (donated by **Alan White**); **A talk by David Inglis on the Manhattan Project, Hiroshima and Nagasaki, 1972** (1 DVD); copies of **correspondence (2 letters) between Jacqueline Eisenmann and André Malraux**, discussing permission to translate **Satyendranath Bose's** section of "Antimemoires"; journalist **Mildred Howie's student research files on cyclotrons** from the 1930s; **Early work on nuclear shell structure: beta decay and nucleon pairing interactions, a manuscript by Arjun N. Saxena**; **letters written by George Gamow** on the subject of long-range navigational methods; **A.H. Taub's**



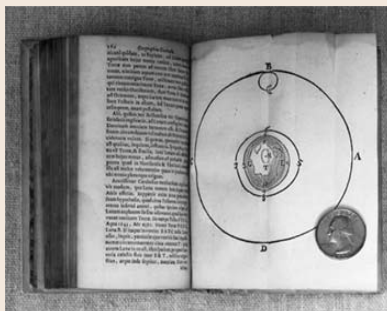
When the astronomer Donald Menzel sat on committees he would keep in front of him on the table a set of colored pens, with which he drew fanciful pictures of "Martians" when the talk failed to engage him. His description of this one reads, "Frustration. This animal-bird... may have derived some of its feeling of frustration from the committee meeting during which I made the sketch." From Donald H. Menzel, "An Earthling's view. Meet the Martians," *The Graduate Journal* 7, No. 1 (December 1965): 220-233—one of the more unusual treasures of the Niels Bohr Library. Credit: *The Royal Society* 2004, courtesy of the Niels Bohrs Library and Archives.

notes on quantum electrodynamics lectures by John von Neumann, 1933; manuscript by Julie A. Schuck, “Factors contributing to the under-representation of women in physics-based engineering fields”; and a history of laser conditions in semiconductors by Maurice Bernard (in French). Also of note is a collection of abstracts of papers from the first Gaseous Electronics Conference, held at the Brookhaven National Lab in 1948.

PHFAWS has fulfilled our hope of becoming a major research tool in physics and allied fields. By including many finding aids in a single searchable index, it provides researchers with a whole new level of access to some of the most important collections. As a result, since the beginning of 2007, PHFAWS has received 25,092 visits with 75,685 page views of individual finding aids. This 3:1 ratio of views to hits means that a large number of users are spending time in the site and finding it worthwhile.

A 17th-Century Textbook

A 1650 first edition of Bernard Varens’s Geographia Generalis was donated to the Niels Bohr Library by Thomas W. Sills. This college textbook, a pioneer in fields now considered geophysics, was used by Isaac Newton as a student, and as a professor Newton edited a new edition. The book includes the “vortex” theory that René Descartes used to explain the Moon’s pull on ocean tides, and which Newton displaced with his theory of universal gravitation. The book is only five inches wide. Sills writes: “All Latin college textbooks prior to ~1670 were of this shape and size. At that time books were very expensive. Only wealthy students could enjoy the luxury of owning their texts... The Trinity College Library would rent such books by the hour to students like Newton,” who attended on a scholarship.



We have improved our software so we can easily add new finding aids and update existing ones. After staff have found an appropriate historical collection described in a finding aid and secured permission to index it, we can now incorporate the finding aid in PHFAWS with no more than some minor tweaking. (Standards for encoding finding aids are a moving target, so some customization is always needed when we add items from a new repository or consortium.)

The United Kingdom finding aids were added with the permission and assistance of the National Archives UK, which hosts A2A (<http://www.a2a.org.uk/>), a database of finding aids describing collections held at local

archives in England and Wales. Other significant additions this year include new finding aids from the University of Chicago, the University of Minnesota and the University of Maryland.

Improvements in Web Access to Finding Aids in Physics and Allied Fields

By Jennifer S. Sullivan

The Niels Bohr Library of the American Institute of Physics has made major improvements in the usability of our Physics History Finding Aids Web site (PHFAWS), while adding some 150 new finding aids to collections, mostly from repositories in the United Kingdom.

This brings the total number of finding aids that can be cross-searched in one operation to 360 from 48 repositories. Among the major collections that can be searched in detail are the papers of Bohm, the Braggs (both father and son), Einstein, Fermi, Feynman, Mott, Oppenheimer and Peierls. Not only physics but astronomy and geophysics are increasingly well represented.

Each finding aid typically includes an introductory essay describing the main features and subjects of the collection and a listing of box and folder contents, sometimes running to hundreds of pages. Historians of science and other scholars can conduct a search on a name or subject term and know that every hit will point them to an item in a relevant archival collection. (Items in many of the finding aids could also be among the results turned up by a general search engine such as Google, but the archival hits would be buried deep among countless items of no use to the scholar.) PHFAWS is located on AIP’s Web site at www.aip.org/history/ead/index.html.

PHFAWS is now a significant international resource for historians of physics and allied fields. It is the culmination of work provided by a rapidly growing consortium of archival institutions. Initially funded by a grant from the National Endowment for the Humanities, the original consortium consisted of the AIP Center for History of Physics and nine other leading archival institutions and placed 60 finding aids online (see the Fall 2000 Newsletter at, www.aip.org/history/newsletter/fall2000/findaid.htm).

As a pioneer in giving access to online finding aids, PHFAWS has been a shared platform consortium for finding aids in our field in a variety of electronic formats. Originally all the finding aids were located as copies on AIP’s own server, but in its revised form PHFAWS points to the website of the repository that owns the collection, so the searcher will be using the most recently updated form of the finding aid.

For additional information, or if you know of finding aids on the web that should be included in PHFAWS, please visit the PHFAWS Web site at <http://www.aip.org/history/ead/index.html> or contact Archivist, Jennifer Sullivan (jsulliva@aip.org, 301 209-3172), or Library Director, Joe Anderson (janderso@aip.org, 301 209-3183).

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” box on our home page: www.aip.org/history/s-indx.htm. To restrict your search to the bibliographies, use the advanced search link.

Volume 37, No. 2 of **Historical Studies in the Physical and Biological Sciences** (to be renamed *Historical Studies in the Natural Sciences* in 2008) is a festschrift for Russell McCormmach, featuring, among other articles: Stephen Brush, “How ideas became knowledge: the light quantum hypothesis, 1905-1935”; David Cassidy, “Oppenheimer’s first paper: molecular band spectra and a professional style”; Karl Hufbauer, “Landau’s youthful sallies into stellar theory: their origins, claims, and receptions”; Helge Kragh, “Cosmology and the entropic creation argument”; and Spencer Weart, “Money for Keeling: monitoring CO₂ levels”.

Volume 40, No. 2 of the **British Journal for the History of Science** includes William Thomas, “The heuristics of war: scientific method and the founders of operations research,” featuring a discussion of physicists Patrick Blackett and Philip Morse; and Patrick Unwin and Robert Unwin, “‘A devotion to the experimental sciences and arts:’ the subscription to the great battery at the Royal Institution 1808-9,” about one means of funding scientific work in the early 19th century.

Speaking of the Royal Institution, Volume 9, No. 2 of **Physics in Perspective** finds Frank A. J. L. James and Anthony Peers discussing its architecture in “Constructing space for science at the Royal Institution of Great Britain”. Also see Pim Huijnen and A. J. Kox, “Paul Ehrenfest’s rough road to Leiden: a physicist’s search for a position, 1904-1912”; Jeroen van Dongen, “Reactionaries and Einstein’s fame: ‘German Scientists for the Preservation of Pure Science’, relativity, and the Bad Neuheim meeting”; and Jan Lacki provides a look at science in Geneva throughout the ages in “The physical tourist, Geneva: from the science of the Enlightenment to CERN”. No. 3 gives us Max Jammer, “Concepts of time in physics: a synopsis”; Ad Maas, “Einstein as engineer: the case of the little machine”; Georgio Dragoni, Giulio Meltese and Luisa Atti, “Quirino Majorana’s experiments on the speed of light and gravitational absorption”; Wolfgang Reiter remembers Ludwig Boltzmann a century after his death; and Antonio Drago and Salvatore Esposito, “Ettore Majorana’s course on theoretical physics: a recent discovery” (a part of a more general flood of articles Esposito has prepared on Ettore Majorana; see also two articles on hole theory and QED in Vol. 37, Nos. 6 and 7 of *Foundations of Physics*; and an article with Albert de Gregorio in the *American Journal of Physics* Vol. 75, No. 9 on Majorana and Enrico Fermi).

Will Thomas Joins the AIP History Center



Will Thomas has joined the AIP Center for History of Physics for a three-year term as Associate Historian. Thomas received his PhD in the History of Science from Harvard University this June after completing his dissertation, “A Veteran Science: Operations Research and Anglo-American Scientific Cultures, 1940-1960”. At Harvard, he revived his department’s History of Physical Sciences Working Group, and was a teaching assistant for “The History of American Capitalism” and “The Einsteinian Revolution”. He was a history major and physics minor as an undergraduate at Northwestern University, where he also worked as an assistant in a nuclear magnetic resonance lab.

Thomas replaces our previous postdoc, Babak Ashrafi, who moved on to an important position in Philadelphia (see the article “Philadelphia Area Center for History of Science Launches Cooperative Programs” on page 6).

Archive for the History of Exact Sciences, Volume 61, No. 1 features Jed Buchwald on “Huygens’ methods for determining optical parameters in birefringence,”; while No. 2 features Tilman Sauer on “Einstein and the early theory of superconductivity, 1919-1922”.

Volume 38, No. 3 of **Studies in the History and Philosophy of Modern Physics** pays another visit to the Copenhagen interpretation of quantum mechanics with Kristian Camilleri’s “Bohr, Heisenberg, and divergent views of complementarity”. Also see Margaret Morrison, “Spin: all is not what it seems”; and, in No. 1, see Gordon Fleming’s essay review of Michela Massini’s recent book, *Pauli’s Exclusion Principle*.

Volume 38, No. 3 of **Studies in the History and Philosophy of Science Part A** brings us Olivier Darrigol, “A Helmholtzian approach to space and time”.

In Volume 37, No. 6 of **Foundations of Physics** see M. A. B. Whitaker, “Solomon’s argument on hidden variables in quantum theory”.

Science in Context, Volume 20, No. 1 includes Andrea Loettgers, “Getting abstract mathematical models in touch with nature,” on the application of physical models to new kinds of systems. In No. 2, Roland Gruschka brings us a unique discussion of “Tuvia Schalit’s *Di spetsyele relativitets-teorye* of 1927 and other introductions to the theory of relativity in Yiddish”; and R. I. G. Hughes, “Theoretical practice: the Bohm-Pines quartet”.

Volume 61, No. 3 of **Notes and Records of the Royal Society** includes John Heilbron, “Benjamin Franklin in Europe: electrician, academician, politician,” and Rajinder Singh, “India’s physics and chemistry Nobel Prize nominators and nominees in colonial and international context”.

Social Studies of Science, Volume 37 features two articles on weapons research: in No. 1, Rebecca Slayton’s “Discursive choices: boycotting Star Wars between science and politics”; and in No. 4, Felicity Mellor’s “Colliding worlds: asteroid research and the legitimization of war in space”.

On radar technologies, **American Heritage of Invention and Technology** offers an article on Frederic D. Schwarz and the continuing popularity of World War II-era LORAN navigational technology in Volume 23, No. 1, while Mark Wolverton writes about “The DEW Line” in Volume 22, No. 4; in this same issue see Don Bedwell’s discussion of the history of GPS technology.

Historia Scientiarum, Volume 16, No. 2 offers Albrecht Heffer, “The logic of disguise: Descartes’ discovery of the law of refraction”; and Volume 17, No. 1 includes Steffen Ducheyne, “Huygens’ understanding of trajectory: via media Galileo and Newton”.

Annals of Science, Volume 64, No. 1 includes M. Eugene Rudd’s “Chromatic aberration of eyepieces in early telescopes”.

Along with an array of discussions of ancient astronomy and astronomical tables, **Journal of the History of Astronomy** Volume 38 presents J. B. Holberg and F. Wesemael, “The discovery of the companion of Sirius and its aftermath,” and Patrick Boner, “Kepler and the Epicurians: causality, coincidence, and the origins of the new star of 1604” in issue No. 2.

Journal of Astronomical History and Heritage, Volume 10, No’s. 1 and 2 features two articles co-authored by Suzanne Débarbat, James Lequeux, Wayne Orchiston, and Jean-Louis Steinberg, “Highlighting the history of French radio astronomy”; also see David W. Hughes and Brian G. Marsden, “Planet, asteroid, minor planet: A case study in astronomical nomenclature”; James Bryan, “E.E. Barnard and the eclipse of Iapetus in 1889”; P. Kevin MacKeown, “William Doberck

– double star astronomer”; Joseph S. Tenn, “Lowell Observatory enters the twentieth century—in the 1950s”; Edward Waluska, “Quasars and the Caltech-Carnegie connection”; David W. Hughes and Susan Cartwright, “John Michell, the Pleiades, and odds of 496,000 to 1”; Vitor Bonifácio, Isabel Malaquias and João Fernandes, “Solar photography in the nineteenth century: The case of the Infante D. Luis Observatory in Lisbon (1871-1880)”; Bjørn Ragnvald Pettersen, “The Norwegian naval observatories”; E.Th. Theodossiou, V.N. Manimanis and P. Mantarakis, “Demetrios Eginitis: Restorer of the Athens Observatory”; Peter Brosche, “F.X. von Zach and the Fifth Continent”; James Bryan, “Stephen J. O’Meara and ring spokes before Voyager 1”.

In “The Visible College revisited: second opinions on the red scientists of the 1930s,” an essay review in **Minerva** Volume 45, No. 3, of recent biographies of Patrick Blackett and J. D. Bernal, Gary Werskey also reviews his own work on radical British scientists.

The August 2007 edition of the **APS Bulletin** focuses on women in physics, including very informative pieces on women in Asian physics. See Tan Lu and Fan Wang on Chien-Shiung Wu; and Eri Yagi and Hisako Matsuda on Toshiko Yuasa. Also, Kwang Hwa Chung reflects on her experiences as the first woman president of the Korea Research Institute of Standards and Science.

In 2007, **Physics Today** has run a number of historical articles: in April, Silvan Schweber, “Defending against nuclear weapons: a 1950s proposal”; in May, Michael Perry, “Remembering the oil-drop experiment”; in June, John Rigden, “Eisenhower, scientists, and Sputnik”; in July, Fae Korsmo, “The genesis of the International Geophysical Year”; and in August, Daniel Kleppner, “Master Michelson’s measurement”.

The **American Journal of Physics**, Volume 75 also features a nice round-up of historical articles. In addition to the De Gregorio and Esposito article mentioned above, in March Slavomir Tuleja, Boris Gazovic, Alexander Tomori, and Jozef Hanc ponder the physics of “Feynman’s wobbling plate”; in May Ronald Newburg writes about “Inertial forces, absolute space, and Mach’s principle: the genesis of relativity”; and the August issue brings us Philip Marston, “Maxwell and creation: acceptance, criticism, and his anonymous publication” as well as Jean Eisenstaedt, “From Newton to Einstein: A forgotten relativistic optics of moving bodies”.

Finally, in **Physics World**, Volume 20, Ed Sandifer reflects in the April issue on the legacy of Leonhard Euler on the 300th anniversary of his birth; in the May issue David Kaiser discusses the relationship between pedagogy and the content of physics research in “Turning physicists into quantum mechanics”;

Physicists, being in no way different from the rest of the population, have short memories for what is inconvenient.

– Anthony Stunden

and in the September issue Matthew Chalmers reviews the history and controversies of string theory in his cover story "Stringscape" while philosophers Nancy Cartwright and Roman Frigg discuss whether criticisms about string theory's lack of falsifiability really constitutes a lethal line of attack.

Documentation Preserved, New Collections

Compiled by Jennifer S. Sullivan

Royal Astronomical Society. Burlington House, Piccadilly, London, W1J 0BQ, United Kingdom.

Royal Astronomical Society records. Collection Dates: 1820-1945.

Max-Planck-Gesellschaft zur Förderung der Wissenschaften. Archiv zur Geschichte der Max-Planck-Gesellschaft. Boltzmannstr. 14, 14195 Berlin, Germany.

Wolfgang Gentner papers. Collection Dates: 1925-1946. Size: 0.15 shelf meters. Restrictions: Collection is restricted in whole or in part, contact the repository for details.

Otto Hachenberg papers. Collection Dates: 1963-1977. Size: 0.3 shelf meters. Restrictions: Collection is restricted in whole or in part, contact the repository for details.

Hans Pauly papers. Collection Dates: 1950-2000. Size: 3.6 shelf meters. Restrictions: Collection is restricted in whole or in part, contact the repository for details.

Brigham Young University. Harold B. Lee Library. Special Collections Division. P.O. Box 26835, Provo, UT 84602-6835, USA.

Collection on **Harvey Fletcher.** Collection Dates: 1947-1955. Size: 8 items.

Brigham Young University College of Physical and Mathematical Sciences records. Collection Dates: 1956-1992. Size: 54 boxes (27 linear feet.). Restrictions: Closed for 25 years after the creation of the records and thereafter open to the public after consultation with the University Archivist and in accordance with the General Restriction Statement of the L. Tom Perry Special Collections.

Brigham Young University Department of Physics records. Collection Dates: 1950-1971. Size: 1 box (6 linear inches).

Brief history of the Physics Department at **Brigham Young University.** Collection Dates: 1960s. Size: 6 pages.

E. John Eastmond papers. Collection Dates: 1936-1980. Size: 16 folders (18 linear inches).

Wayne B. Hales oral history interview. Collection Dates: 1978 May 25. Size: 1 reel to reel audio tape (1.5 hours). Transcript: 19 pages.

Wayne B. Hales records. Collection Dates: 1944-1945. Size: 27 items.

Vern Knudsen laboratory notebooks. Collection Dates: 1913-1940. Size: 10 notebooks.

Joseph Francis Merrill collection. Collection Dates: 1887-1952. Size: 4 boxes (20 linear inches).

Oral history interview with Roland Perry. Collection Dates: 1981 March 13. Size: Tape: 2 sound tape reels (135 minutes). Transcript: 28 pages.

Central State University. Hallie Q. Brown Memorial Library. 1400 Brush Row Road, Wilberforce, OH 45384, USA.

Herman R. Branson papers. Collection Dates: 1952-1970. Size: circa 8 linear feet.

Chemical Heritage Foundation. The Donald F. and Mildred Topp Othmer Library of Chemical History. 315 Chestnut Street, Philadelphia, PA 19106-2702, USA.

Addenda to the papers of Robert G. Parr. Collection Dates: 1935-2001 (bulk 1950-1995). Size: 5.25 linear feet (37 boxes).

The Papers of Robert G. Parr. Collection Dates: 1945-2002 (bulk 1950-1990) Size: 69 linear feet (161 boxes).

Papers of Dudley A. Saville. Collection Dates: 1976-2006. Size: 27 linear feet.

The Papers of Sir John A. Pople. Collection Dates: 1930-2004 bulk 1965-2000. Size: 21 linear feet. (49 boxes). Restrictions: Portions of this collection may be restricted due to intellectual property issues.

Chemical Heritage Foundation. The Beckman Center for History of Chemistry. 315 Chestnut Street, Philadelphia, PA 19106-2702, USA.

Oral history interview with Raymond Boyer. Collection Dates: 1986 January 14 and August 19. Size: Transcript: 59 pages. Recording: 270 minutes.

Oral history interview with Andrew S. Grove. Collection Dates: 2004 July 14 and September 1. Size: Transcript: 41 pages.

Oral history interview with Michael A. Kelly. Collection Dates: 2002 March 19. Size: Transcript: 27 pages.

Oral history interview with William G. McMillan. Collection Dates: 1992 March 25. Size: Transcript: 95 pages. Restrictions: Semi-restricted Access. Users may view the oral history with the permission of CHF. Permission of the interviewee is required to quote from, cite, or reproduce the oral history. Please contact CHF to request interviewee's permission.

Oral history interview with Henry I. Smith. Collection Dates: 2005 October 25. Size: Transcript: 49 pages. Recording: 211 minutes.

Oral history interview with Charles P. Smyth. Collection Dates: 1986 May 30. Size: Transcript: 81 pages. Recording: 540 minutes.

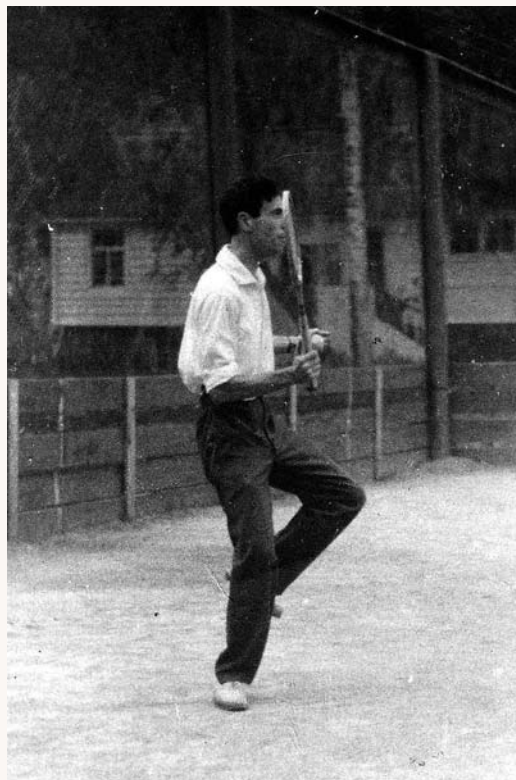
Claremont College. Archives. 800 N. Dartmouth Ave, Claremont, CA 91711, USA.

Harvey Mudd College oral history project on the Atomic Age : Athelstan Spilhaus. Collection Dates: 1975. Size: 2 v. : port. ; 28 cm.

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

Augustus Shaw records. Collection Dates: 1925-1926. Size: 0.5 linear feet.

Georgia Institute of Technology. Library and Information Center, Atlanta, GA 30332-0900, USA.



Lev Landau playing tennis. Credit: Ellen Rydian, courtesy AIP Emilio Segrè Visual Archives, Physics Today Collection.

Georgia Institute of Technology School of Physics photograph collection. Collection Dates: 1933-1945. Size: 0.10 linear feet.
Georgia Institute of Technology School of Physics records. Collection Dates: 1919-1951 (bulk 1932-1948). Size: 1.2 linear feet. Restrictions: Some personnel files may be restricted and require Archivist's approval for examination.
Geoffrey Gunter Eichholz papers. Collection Dates: 1960-1980. Size: 16 linear feet.
R. A. Young papers. Collection Dates: 1967-1992. Size: 12 linear feet.

International Business Machines Corporation (IBM). Archives. Route 100, Somers, NY 10589, USA.

Richard L. Garwin Papers. Collection Dates: circa 1949-2007. Restrictions: Papers are unprocessed and restricted, contact the IBM Corporate Archives for more information.

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

Johns Hopkins University oral history collection. Collection Dates: 1999-[ongoing]. Size: 55 half-document cases (9 cubic feet)

Charles S. Peirce notebook. Collection Dates: 1880-1880 Size: 1 volume.

Kentucky State University. Blazer Library Special Collections and Archives. 400 East Main Street, Frankfort, KY 40601, USA.

Kentucky State University Departmental records. Collection Dates: 1951-1995. Size: 213 linear feet.

Lincoln University. Special Collections and Archives. 1570 Baltimore Pike, Lincoln University, PA 19352, USA.

Herman R. Branson records. Collection Dates: 1970-1986. Size: 6.5 linear feet.

National Center for Atmospheric Research/University Corporation for Atmospheric Research. Archives. PO Box 3000, Boulder, CO 80307-3000, USA.

Janet S. Roberts collection. Collection Dates: 1940-1980 (circa). Size: 2 linear feet.

University Corporation for Atmospheric Research records on the creation of HAO, UCAR, and NCAR and general correspondence regarding UCAR and NCAR divisions and projects. Collection Dates: 1940-1980. Size: 7.5 linear feet. Restrictions: Consultation with UCAR requested prior to accessing some files.

Northern Arizona University. Cline Library. Special Collections and Archives Department. Flagstaff, AZ 86011, USA.

Arthur Adel collection. Collection Dates: 1909-2000. Size: 2 linear feet.

Oregon State University. University Archives. Corvallis, OR 97331-4501, USA.

"Oceanography: The Making of a Science" Videotapes. Collection Dates: 2000 Size: 3 cubic feet (110 videotapes)

Princeton University. Department of Rare Books and Special Collections. Seeley G. Mudd Manuscript Library. 65 Olden Street, Princeton, NJ 08544, USA.

William O. Baker papers. Collection Dates: 1959-1999. Size: 51 linear feet. Restrictions: Single photocopies may be made for research purposes. Permission to publish materials from the collection must be requested from the Curator of the Public Policy Papers. Researchers

are responsible for determining any copyright questions.

Biographical sketches of some members of the mathematics and physics faculty of **Princeton University** : typescript. Collection Dates: circa 1950. Size: 1 bound manuscript (39 pages).

Princeton-Pennsylvania Accelerator records. Collection Dates: 1963-1971. Size: 20.0 linear feet (16 boxes). Restrictions: Access to this collection is restricted. Contact repository for details.

Lincoln Gilmore Smith collection. Collection Dates: 1950-1966. Size: 0.20 linear feet (1 half-size archival box).

Radcliffe Institute for Advanced Study. Schlesinger Library. Cambridge, MA 02138, USA.

Dorrit Hoffleit papers. Collection Dates: 1906-2005. Size: 14.33 linear feet.

Rensselaer Polytechnic Institute. Folsom Library. Institute Archives and Special Collections. Troy, NY 12180, USA.

Rensselaer Polytechnic Institute Astrophysical Society records. Collection Dates: circa 1939-1963. Size: 0.2 linear feet (1 half manuscript box, 1 oversized folder).

Smithsonian Institution Archives. Capital Gallery. Suite 3000. MRC 507, 600 Maryland Avenue, SW, Washington, DC 20024-2520, USA.

Richard H. Emmons Papers. Collection Dates: c. 1954-1998. Size: 4 cubic feet (4 record storage boxes).

Frederick Atwood Greeley Papers. Collection Dates: 1920-1979. Size: 0.5 linear meter. Restrictions: (1) Additional materials on the SAO solar constant program and Greeley's reports and correspondence can be found in record unit 85; (2) use of this record unit requires prior arrangement with the Archives staff.

Charles Greeley Abbot papers. Collection Dates: circa 1891-1950. Size: 6.43 cubic feet (6 record storage boxes; 1 oversize box).

Riccardo Giacconi videohistory interviews. Collection Dates: 2004. Size: 5 audiotapes (5 hours). 5 videotapes.

Smithsonian Institution. National Air and Space Museum. Archives Division. MRC 322, Washington, DC, 20560, USA.

Early Rocketry (V-2) photograph collection. Collection Dates: 1942-1990 (bulk 1942-1948). Size: 2.93 cubic feet (7 legal document boxes).

Texas A&M University. Cushing Memorial Library and Archives. College Station, TX 77843-5000, USA.

Oral History Collection, Miscellaneous Tapes and Transcriptions. Collection. Dates: circa 1958-1984

The Oran W. Nicks Papers. Collection Dates: 1960-1991

University of Alaska. Alaska and Polar Regions Collections. Fairbanks, AK 99775, USA.

Franklin E. Roach papers. Collection Dates: 1931-1994 Size: 13 cubic feet.

University of California, Santa Barbara. Library. Department of Special Collections. Santa Barbara, CA 93106, USA.

Reminiscences of wartime Los Alamos [sound recording]. Collection Dates: 1975. Size: 10 sound cassettes.

University of Idaho. Library. Special Collections and Archives. Moscow, ID 83843-4198, USA.

David Denault papers. Collection Dates: 1969-1977. Size: 19 linear feet

Samuel Chan papers. Collection Dates: 1962-1988. Size: 1 cubic foot.

Historians, by trade, know "nothing about science." Thus, although we have learned quite a lot about women and workers, wars, political movements, and other important aspects of ordinary life, science — the muscle of twentieth-century North America — has been understudied and poorly understood. —Londa Schiebinger

University of Missouri. Western Historical Manuscript Collection. 23 Ellis Library, Columbia, MO 65201, USA.

Lankford, John, Papers. Size: .4 linear feet.

Lewis, Meriwether (1774-1809), Astronomy Notebook. Collection Dates: [1805]. Size: 1 volume.

Morris, Wilson C. (1877-1947), Papers. Collection Dates: 1877-1947 Size: .2 linear feet.

Thomas Jefferson Jackson (1866-1962), Notebooks. Collection Dates: 1892-1896. Size: 3 folders.

Alliance For The Construction of Telescopes. Collection Dates: 1983-1989 Size: .4 linear feet.

University of Pennsylvania. University Archives and Records Center. Philadelphia, PA 19104-6320, USA.

Jerry Donohue papers. Collection Dates: 1941 - 1985 Size: 12 Cubic feet.

College of Arts and Sciences Department of Astronomy Records. Collection Dates: 1839-1975 Size: 19 Cubic feet.

College of Arts and Sciences Department of Physics Records, 1901-1953. Collection Dates: 1901-1956 Size: 1 cubic foot.

Gaylord P. Harnwell papers. Collection Dates: 1889-1992 1924-1982. Size: 30 cubic feet.

University of Tennessee. Special Collections Library. Knoxville, TN 37996-4006, USA.

Ronald L. Kathren Collection. Collection Dates: 1956-1995 Size: 6 linear feet.

George Warlick Health Physics Papers. Collection Dates: 1940s-1950 Size: .5 linear feet.

University of Utah. J. Willard Marriott Library. Salt Lake City, UT 84112, USA.

The Kenneth L. Cook Papers. Collection Dates: 1950-1996 Restrictions: Materials must be used on-site. Two business days advance notice required. Access to parts of this collection may be restricted under provisions of state or federal law, fragile condition of the material, or by the donor. No use of original audio-visual materials will be allowed; access copies will be made available for viewing.

Department of Geology and Geophysics Research Records. Collection Dates: 1970-1982. Size: 1 linear foot. Restrictions: Materials must be used on-site; advance notice suggested. Access to parts of this collection may be restricted under provisions of state or federal law.

The David Breck Morris papers. Collection Dates: 1961-1993. Size: 1.75 linear ft. Restrictions: Materials must be used on-site; advance notice suggested. Access to parts of this collection may be restricted under provisions of state or federal law.

Finding Aids Available Online

We have learned of many new finding aids that are now available online. The finding aids, which are detailed descriptions of archival collections, were reported in 2007 to the International Catalog of Sources for History of Physics and Allied Sciences. To view the listing of collections with finding aids newly available, go to our newsletter at www.aip.org/history/newsletter/fall2007. Note also that there are now 360 finding aids from 48 repositories whose entire text is indexed and searchable on our Physics History Finding Aids Web site at www.aip.org/history/ead/ (see page 9).

The World History of Science Online: Toward an Open-Access Global Bibliographical and Archival Database

By Stephen P. Weldon, Chair, Governing Board, WHSO

The World History of Science Online (WHSO) is a relatively recent project with a goal of creating an open-internet Web site where researchers can access primary and secondary source bibliographical information, as well as archival locator data, related to history of science around the world (see www.dhs-whso.org). It is a project of the Division of History of Science and Technology of the International Union of History and Philosophy of Science (IUHPS/DHST). Initiated by the Secretary-General, Juan José Saldaña, after the Mexico City international history of science congress, WHSO was taken forward at a meeting of experts in Paris in 2003. It received statements of support from the Conseil International de la Philosophie et des Sciences Humaines (CIPSH) and International Social Science Council, and some financial support from the International Council of Sciences (ICSU), CIPSH, and the Maison des Sciences de l'Homme, Paris. The 2005 Beijing meeting of IUHPS featured a symposium on WHSO that included presenters involved in archival or bibliographical projects from around the world.

This past spring a governing board was established along with a formal organizational structure. Stephen P. Weldon (University of Oklahoma, USA, Editor of the History of Science Society's *Isis* Current Bibliography) agreed to chair the governing board, which also includes representatives from Australia, Brazil, France, India, Japan, and the UK. The global scope of this project is quite ambitious, and it

is still in its early stages. One quickly realizable goal will be to make sure that the Web site provides continually updated links and information about major online tools for researchers. A central aspect of WHSO is to promote bibliographic and archival work that can be integrated with a web-based search engine. To that end, a Commission on National Bibliographies was created that will be working to find ways to locate and promote such work through volunteer efforts, grants, and collaboration. There are plans to hold a meeting sometime next year that will bring people together to work on both the technical and human aspects of the problem. The goal is to have an integrated search engine functioning on a basic level with some core data sets within a couple of years.

The great value of this project is that it addresses one of the most serious problems faced by the international history of science community—the lack of access by scholars in developing countries to first-rate scholarly tools, like those many of us in the West take for granted. This inequality extends even into wealthy Europe, where many countries have limited access to tools such as the HSTM online bibliographical database, which includes four major secondary-source bibliographies updated annually (see www.hssonline.org/teach_res/hst/mf_hst.html). With the proliferation of web-based tools and online data and with the increasing access to the Internet around the world, we may hope that WHSO will become a major resource for scholars worldwide

Recent Publications on the History of Physics

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

■ BOOKS

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

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

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

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COLLECTED BIOGRAPHIES (3 or more Scientists)

Glass, I. S. Revolutionaries of the Cosmos: The Astro-Physicists. 317 pp. New York: Oxford University Press, 2006. ISBN 0-19-857099-6 (hc) \$74.50.

Hargittai, I. The Martians of Science: Five Physicists Who Changed the Twentieth Century. xxiv +313 pp., illus., bibl., index. New York: Oxford University Press, 2006. ISBN 10-19-517845-9 \$34.50.

Marton, Kait The Great Escape: Nine Jews Who Fled Hitler and Changed the World. 271 pp. New York: Simon and Schuster, 2006. ISBN 978-0-7432-6115-9 \$27.00.

COLLECTED WORKS OF SCIENTISTS (including unpublished papers)

Daemmrich, Arthur A.; Gray, Nancy Ryan; Shaper, Leah (eds.) Reflections From the Frontiers, Explorations for the Future: Gordon Research Conferences, 1931-2006. 140 pp. Philadelphia: Chemical Heritage Foundation Press, 2006. ISBN 0941901394 \$16.95.

HISTORY OF ASTRONOMY, ASTROPHYSICS, COSMOLOGY & SPACE SCIENCES

Collins, M. (ed.) After Sputnik: 50 Years of the Space Age. 256 pp. New York: Smithsonian Books/Collins, 2007. ISBN 978-0-06-089781-9 \$35.00.

Cortfield, Richard Lives of the Planets: A Natural History of the Solar System. xiv +268 pp. illus., index. New York: Basic Books, 2007. SBN 10: 0-425-01403-8 (hc) \$27.50.

French, F.; Burgess, C. Into That Silent Sea: Trailblazers of the Space Era, 1961-1965. 397 pp. Lincoln, Nebraska: University of Nebraska Press, 2007. ISBN 978-0-8032-1146-9 (hc) \$29.95.

Harland, D. M. The First Men on the Moon: The Story of Apollo 11. 378 pp. New York: Praxis/Springer Books in Science Exploration, 2007. ISBN 978-0-387-34176-7 (pb) \$39.95.

Kragh, H.S. Conceptions of the Cosmos: From Myths to the Accelerating Universe, A History of Cosmology. 276 pp. New York: Oxford University Press, 2007. ISBN 978-0-19-92096-3 \$64.50.

Lindberg Christensen, L.; Fosbury, B. Hubble: 15 Years of Discovery. 124 pp. New York: Springer, 2006. ISBN 0-387-28599-7 \$39.95.

Longair, M. S. The Cosmic Century: A History of Astrophysics and Cosmology. 545 pp., illus. New York: Cambridge University Press, 2006. ISBN 0-521-47436-1 (hc) \$60.00.

May, Brian; Moore, Patrick; Lintott, Chris Bang! The Complete History of the Universe. 180 pp., illus. Carlton Books. ISBN 9781844425525.

Primack, Joel R.; Abrams, Nancy Ellen The View From the Center of the Universe: Discovering Our Extraordinary Place in the Cosmos. 386 pp. New York: Riverhead Books, 2006. ISBN 1-59448-914-9 \$26.95.

Verschuur, G. L. The Invisible Universe: The Story of Radio Astronomy. 156 pp. New York: Springer, 2007. ISBN 978-0-387-30816-6 \$29.95.

Weintraub, D. A. Is Pluto a Planet?: A Historical Journey Through the Solar System. 254 pp. Princeton, NJ: Princeton University Press, 2007. ISBN 978-0-691-12348-6 \$27.95.

Young, A.H. Lunar and Planetary Rovers: The Wheels of Apollo and the Quest for Mars. 305 pp. New York: Praxis/Springer, 2007. ISBN 978-0-387-30774-9 \$39.95.

HISTORY OF EARTH SCIENCES

Belanger, D. O. Deep Freeze: The United States, the International Geophysical Year, and the Origins of Antarctica's Age of Science. 494 pp. Boulder: University Press of Colorado, 2006. ISBN 978-0-87081-830-1 \$29.95.

Danson, Edwin Weighing the World: The Quest to Measure the Earth. 304 pp. New York: Oxford University Press, 2006. ISBN 978-0-19-518169-2 (hc) \$29.95.

Fleming, James Rodger; Jankovic, Vladimir; Coen, Deborah R. (eds.) Intimate Universality. Local and Global Themes in the History of Weather and Climate. xx +264 pp., illus., figs., index. Sagamore Beach, MA: Science History Publications/USA: 2006. ISBN 0881353671 (hc) \$39.95.

Hough, Susan Elizabeth Richter's Scale: Measure of an Earthquake, Measure of a Man. 352 pp., illus. Princeton: Princeton University Press, 2006. ISBN 978-0-691-12807-8 \$27.95.

Jackson, P. W. *The Chronologers' Quest: Episodes in the Search for the Age of The Earth.* 291 pp. New York: Cambridge University Press, 2006. ISBN 978-0-521-81332-7 \$30.00.

Lynch, Peter *The Emergence of Numerical Weather Prediction: Richardson's Dream.* 304 pp., illus. New York: Cambridge University Press, 2006. ISBN 85729-5 (hc) \$75.00.

Markley, Robert *Dying Planet: Mars in Science and the Imagination.* x +444 pp., illus., bibl., index. Durham, N.C./London: Duke University Press, 2005. (hc) \$89.95; ISBN 0822336383 (pb) \$24.95.

Rozwadowski, Helen M. *Fathoming the Ocean: The Discovery and Exploration of the Deep Sea.* Foreword by Sylvia A. Earle. xii +276 pp., illus., index. Cambridge Mass.: Belknap Press of Harvard University Press, 2005. ISBN 0674016912 \$26.00.

HISTORY OF INSTRUMENTS

Andersen, Geoff *The Telescope: Its History, Technology, and Future.* 304 pp., illus. Princeton: Princeton University Press, 2007. ISBN 978-0-691-12979-2 \$29.95.

Croft, W. J. *Under the Microscope: A Brief History of Microscopy.* 138 pp. Hackensack, NJ: World Scientific, 2006. ISBN 978-981-02-3781-3 \$38.00.

Grob, Hart; Hooijmaijers, Hans (eds.) *Who Needs Scientific Instruments? Proc. of Conf. on Scientific Instruments and their Uses, 20-22 Oct. 2005.* 272 pp., illus., notes. Leiden: Museum Boerhaave, 2006. ISBN 9062921582 (pb) Euro 40.

Morrison-Low, A. D. *Making Scientific Instruments in the Industrial Revolution.* 400 pp., illus., app., bibl., index. Williston, VT: Ashgate Publishing, 2007. ISBN 0-7546-5758-2 (hc) \$99.95.

Van Cleempoel, K. *Astrolabes at Greenwich: A Catalogue of the Astrolabes in the National Maritime Museum, Greenwich.* 339 pp. New York: Oxford University Press, 2005. ISBN 0-19-853069-2 (hc) \$179.50.

Watson, F. Stargazer: *The Life and Times of the Telescope.* 342 pp. Cambridge, MA: Da Capo Press, 2006. ISBN 0-306-81483-8 (pb) \$15.95.

Winkel, B. J.; Deavours, C. A.; Kahn, D.; Kruh, L. *The German Enigma Cipher Machine: Beginnings, Success, and Ultimate Failure.* 439 pp. Norwood, MA: Artech House, 2005. ISBN 1-58053-996-3 \$95.00.

HISTORY OF MATHEMATICS

Bardi, J. S. *The Calculus Wars: Newton, Leibniz, and the Greatest Mathematical Clash of All Time.* 277 pp. New York: Thunder's Mouth Press, 2006. ISBN 1-56025-706-7 \$25.00.

Hellman, H. *Great Feuds in Mathematics: Ten of the Liveliest Disputes Ever.* 250 pp. Hoboken, NJ: Wiley, 2006. ISBN 0-471-64877-9 \$24.95.

Livio, Mario *The Equation that Couldn't be Solved. How Mathematical Genius Discovered the Language of Symmetry.* 353 pp. New York: Simon & Schuster, 2005. ISBN 0-7432-5820-7 \$26.95.

HISTORY OF PHYSICS

Arabatzis, Theodore *Representing Electrons: A Biographical Approach to Theoretical Entities.* xiv +295 pp., bibl., index. Chicago: University of Chicago Press, 2006. ISBN 978-0-266-02420-2 (hc) \$70.00.

Baigrie, B. *Electricity and Magnetism: A Historical Perspective.* 165 pp. Westport, CT: Greenwood Press, 2007. ISBN 978-0-313-33358-3 \$65.00.

Crelinsten Jeffrey Einstein's *Jury: The Race to Test Relativity.* x +397 pp., illus., app., bibl., index. Princeton, NJ: Princeton University Press, 2006. ISBN 0-691-12310-1 (hc) \$35.00.

Crowe, Michael J. *Mechanics from Aristotle to Einstein.* xxii +332 pp., Santa Fe, NM: Green Lion Press. ISBN 978-1-888009-32-3 (pb).

Eisenstaedt, J. *The Curious History of Relativity: How Einstein's Theory of Gravity was Lost and Found Gain.* ix +363 pp., illus., bibl., index. Princeton, NJ: Princeton University Press, 2006. ISBN 0-691-11865-5 (hc) \$29.95.

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Lindley, David Einstein, Heisenberg, Bohr, and the Struggle for the Soul of Science. 257 pp. New York: Doubleday, 2007. ISBN 978-0-385-51506-1 \$26.00.

Newton, Roger G. From Clockwork to Crapshoot: A History of Physics. vi +321 pp., figs., bibl., index. Cambridge, MA: Harvard University Press, 2007. ISBN 0674023374 (hc) \$29.95.

Oerter, Robert The Theory of Almost Everything. The Standard Model, the Unsung Triumph of Modern Physics. 327 pp. New York: Pi Press, 2006. ISBN 0-13-236678-9 \$24.95.

Richtel, Pascal A Natural History of Time. Transl. John Venerella. 400 pp., Halftones, line drawings. Chicago: University of Chicago Press, 2007. ISBN 918-0-266-71287-1 (pb).

Simpson, Thomas K. Figures of Thought. A Literary Appreciation of **Maxwell's** Treatise on Electricity and Magnetism. xix +169 pp., figs., bibl., index. Santa Fe, NM: Green Lion Press, 2006. ISBN 1-888009-31-4 (pb) \$17.95.

Smolin, Lee The Trouble with Physics: The Rise of String Theory, the Fall of a Science, and What Comes Next. xxiii +392 pp., notes, index. New York: Houghton Mifflin, 2006. ISBN 0-618-55105-0 (pb) \$26.00.

Stewart, I. Why Beauty is Truth: A History of Symmetry. xiii +290 pp., ill., index. New York: Basic Books, 2007. ISBN 978-0-465-08236-0 (hc) \$26.95.

HISTORY OF SCIENCE

Angier, Natalie The Canon: A Whirligig Tour of the Beautiful Basics of Science. 293 pp., ref., index. Boston, New York: Houghton Mifflin Co., 2007. ISBN 10: 0-618-24295-3 (hc) \$27.00.

Johnston, S. F. Holographic Visions: A History of New Science. 518 pp. New York: Oxford University Press, 2006. ISBN 0-19-857122-4 \$134.50.

Langone, John; Stutz, Bruce; Glanopoulos, Andrea. Theories for Everything: An Illustrated History of Science from the Invention of Numbers to String Theory. 407 pp., illus., index. Washington, DC: National Geographic Society, 2006. ISBN 0792239121 (hc) \$40.00.

Rosheim, M. E. Leonardo's Lost Robots. 188 pp. New York: Springer, 2006. ISBN 3-540-28440-0 \$39.95.

Scerri, Eric R. The Periodic Table: Its Story and Its Significance. Xxii 346 pp., illus., figs., notes, index. New York: Oxford University Press, 2006. ISBN 978-0-19-530573-9 (hc) \$35.00.

Shepherd-Barr, Kirsten. Science on Stage: From Doctor Faustus to Copenhagen. 271 pp. Princeton NJ: Princeton University Press, 2006. ISBN 0-691-12150-8 \$29.95.

HISTORY OF TECHNOLOGY

Berube, David M. Nano-Hype: The Truth Behind the Nanotechnology Buzz. 521 pp., figs., app., bibl., index. Amherst, N.Y.: Prometheus Books, 2006. ISBN 978-1-59102-351-7 (hc) \$28.00.

Conway, Erik M. Blind Landings: Low-Visibility Operations in American Aviation, 1918-1958. xiv +218 pp., illus., notes, index. Baltimore: The Johns Hopkins University Press, 2006. ISBN 0801884497 (hc) \$45.00.

Hecht, Jeff Beam: The Race to Make the Laser. x 284 pp., apps., bibl., index. Oxford: Oxford University Press, 2005. ISBN 0195142101 (hc) \$29.99.

Jones, S. E. *Against Technology: From the Luddites to Neo-Luddism.* 277 pp. New York: Routledge/Taylor & Francis, 2006. ISBN 0-415-97868-8 (pb) \$24.95.

Palmer, Scott W. *Dictatorship of the Air: Aviation Culture and the Fate of Modern Russia.* 328 pp., illus. New York: Cambridge University Press, 2006. (hc) \$40.00.

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INDIVIDUAL BIOGRAPHIES & AUTOBIOGRAPHIES

[Edison, Thomas Alva] Stross, Randall *The Wizard of Menlo Park: How Thomas Alva Edison Invented the Modern World.* 376 pp., illus., notes, index. New York: Crown Publishers, 2007. ISBN 978-1-4000-4762-8 (hc) \$24.95.

[Einstein, Albert] Buchwald, Dian Kormos; Sauer, Tilman; Rosenkranz, Ze'ev; Illy, Josef; Holmes, Virginia Iris (eds.) Translated by **Ann Hentschel** *The Collected Papers of Albert Einstein, Vol. 10: The Berlin Years: Correspondence, May – December 1920, and Supplementary Correspondence, 1909 – 1920.* lxix +683 pp., illus., figs., bibl., apps., indexes. Princeton, NJ: Princeton University Press, 2006. ISBN 069112826X (hc) \$110.00.

[Einstein, Albert] Elzinga, A. *Einstein's Nobel Prize: A Glimpse Behind Closed Doors, The Archival Evidence.* 228 pp. Sagamore Beach MA: Science History Publications, 2006. ISBN 0-88135-283-7 \$39.95.

[Einstein, Albert] Isaacson, Walter *Einstein: His Life and Universe.* 718 pp., illus. New York: Simon and Schuster, 2007. ISBN 9781847370488 (hc) \$32.00.

[Einstein, Albert] Rigden, J. S. *Einstein 1905: The Standard of Greatness.* 173 pp. Cambridge, MA: Harvard University Press, 2006. ISBN 0-674-02104-5 (pb) \$14.95.

[Faraday, Michael] Hirshfeld, A. *The Electric Life of Michael Faraday.* 258 pp. New York: Walker, 2006. ISBN 0-8027-1470-6 \$24.00.

[Franklin, Benjamin] Chaplin, Joyce E. *The First Scientific American: Benjamin Franklin and the Pursuit of Genius.* 421 pp. New York: Basic Books, 2006. ISBN 0-465-00955-7 \$27.50.

[Franklin, Benjamin] Dray, Philip *Stealing God's Thunder: Benjamin Franklin's Lightning Rod and the Invention of America.* 279 pp. New York: Random House, 2005. ISBN 1-4000-6032-X \$25.95.

[Galilei, Galileo] Biagioli, Mario *Galileo's Instruments of Credit: Telescopes, Images, Secrecy.* xi +302pp., illus. Chicago: University of Chicago Press, 2006. (hc) \$35.00.

[Galilei, Galileo] Frova, Andrea; Marenzana, Mariapiera. *Thus Spoke Galileo. The Great Scientist's Ideas and their Relevance to the Present Day.* 512 pp. New York: Oxford University Press, 2006. ISBN 978-0-19-856625-0 (hc) \$39.50.

[Gould, Rupert T.] *Time Restored. The Harrison Timekeepers and R.T. Gould, the Man Who Knew (Almost) Everything.* 448 pp. New York: Oxford University Press, 2006. ISBN 978-0-19-856802-5 (hc) \$49.50.

[Hooke, Robert] Cooper, Michael; Hunter, Michael (eds.) *Robert Hooke: Tercentennial Studies.* 358 pp., illus. Burlington, VT: Ashgate, 2006. ISBN 0-7546-5365-X (hc) \$99.95.

[Lavoisier, Antoine Laurent] Bell, M. S. *Lavoisier in the Year One: The Birth of a New Science in an Age of Revolution.* 214 pp. New York: Atlas Books/ W. W. Norton, 2006. ISBN 0-393-32854-6 (pb) \$13.95.

[McNair, Ronald E.] McNair, C. S.; Brewer, H. M. *In the Spirit of Ronald E. McNair-Astronaut: An American Hero.* 241 pp. Atlanta, GA: Publishing Associates, 2005. ISBN 0-942683-18-8 \$24.95.

[Ne'eman, Yuval] Watson, A. *Soldier, Scientist, and Statesman: A Biography of Yuval Ne'eman.* 146 pp. Tel Aviv, Israel: Ramot: 2006. ISBN 965-274-426-3 (pb) \$35.00.

[Newcomb, Simon] Carter, Bill; Carter, Merri Sue. *Simon Newcomb, America's Unofficial Astronomer Royal.* 213 pp. St. Augustine, FL: Mantanzas, 2006. ISBN 1-59113-803-5 \$26.95.

[Oppenheimer, J. Robert] Pais, Abraham, with supplemental material by Robert P. Crease. *J. Robert Oppenheimer: A Life.* 353 pp. New York: Oxford University Press, 2006. ISBN 0-19-516673-6 \$30.00.

[**Reichenbach, Hans**] **Gimbel, Steven; Walz, Anke** (eds.) *Defending Einstein: Hans Reichenbach's Writings on Space, Time, and Motion*. vi +216 pp., figs., index. New York: Cambridge University Press, 2006. ISBN 5021859581 (hc) \$80.00.

[**Sakharov, Andrei**] **Rubenstein, Joshua; Gribanov, Alexander** (eds.) *The KGB File of Andrei Sakharov*. 448 pp., illus. New Haven, CT: Yale University Press, 2005. ISBN 0-300-10681-5 (hc) \$45.00.

[**Shockley, William**] **Shurkin, J. N.** *Broken Genius: The Rise and Fall of William Shockley, Creator of the Electronic Age*. 297 pp. New York: Macmillan, 2006. ISBN 1-4039-8815-3 \$27.95.

INSTITUTIONAL DEVELOPMENT OF SCIENCE

Crouch, T. D. *Rocketeers and Gentlemen Engineers: A History of the American Institute of Aeronautics and Astronautics ... and What Came Before*. 292 pp. Reston VA: American Institute of Aeronautics and Astronautics, 2006. ISBN 1-56347-668-1 \$49.95.

Kay, W. D. *Defining NASA: The Historical Debate over the Agency's Mission*. xii +247 pp., index. Albany: State University of New York Press, 2005. (pb) \$24.00.

Lecuyer, Christophe *Making Silicon Valley: Innovation and the Growth of High Tech, 1930-1970*. x +393pp., illus. Cambridge: MIT University Press, 2006. ISBN 978-0-262-12281-8 \$40.00.

Rieke, G. H. *The Last of the Great Observatories: Spitzer and the Era of Faster, Better, Cheaper at NASA*. 233 pp. Tucson: University of Arizona Press, 2006. ISBN 0-8165-2522-6 (pb) \$40.00.

Segal, Howard P. *Recasting the Machine Age: Henry Ford's Village Industries*. xv +244 pp., illus., bibl., index. Amherst/Boston: University of Massachusetts Press, 2005. ISBN 1558494812(hc) \$34.95.

Seitz, F. A. *Selection of Highlights from the History of the National Academy of Sciences, 1863-2005*. 111 pp. Lanham, MD, 2007. ISBN 978-0-7618-3586-8 (hc) \$45.00; ISBN 978-0-7618-3587-5 (pb) \$19.95.

Stratton, Julius A.; Mannix, Loretta H. *Mind and Hand: The Birth of MIT*. xix +781 pp., apps., illus., bibl., index. Cambridge, Mass./London: MIT Press, 2005. ISBN 0262195240 (hc) \$55.00.

Taub, Liba; Willmoth, Frances (eds.) *The Whipple Museum of the History of Science, Instruments and Interpretations, to Celebrate the 60th Anniversary of R. S. Whipple's Gift to the University of Cambridge*. xx +492 pp., illus., index. Cambridge: University of Cambridge Press, 2006. ISBN 052186609X (hc) Euro 35.

Vest, Charles M. *Pursuing the Endless Frontier: Essays of MIT and the Role of Research Universities*. xxvi +292 pp., index. Cambridge, Mass./London: MIT Press, 2004. ISBN 02622207 (hc) \$26.00.

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Finkbeiner, A. *The Jasons: The Secret History of Science's Postwar Elite.* 304 pp. New York: Viking Press, 2006. ISBN 0-670-03489-4 \$27.95.

SCIENCE AND SOCIETY

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Hodgson, P. E. *Theology and Modern Physics.* 282 pp. Burlington VT: Ashgate, 2005. ISBN 0-7546-3623-2 (pb) \$99.95.

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SCIENCE AND TECHNOLOGY – ENERGY, EFFECTS ON ENVIRONMENT

Montgomery, David R. *Dirt: The Erosion of Civilization.* ix +285 pp., illus., notes, bibl., index. Berkeley: University of California Press, 2007. ISBN 10: 520-24870-8 (hc) \$24.95.

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Pollock, Ethan. Stalin *and the Soviet Science Wars.* 257 pp., illus., bibl. Princeton, NJ: Princeton University Press, 2006. ISBN 0691124671 (hc) \$35.00.

Vilensky, Joel A. *Dew of Death: The Story of Lewiisite, America's World War I Weapon of Mass Destruction.* Foreword by **Richard Butler** xxii +213 pp., ill., bibl., index. Bloomington: Indiana University Press, 2005. ISBN 0253346126 \$25.00.

Weinberger, Sharon *Imaginary Weapons: A Journey Through the Pentagon's Scientific Underworld.* 304 pp. New York: Norton, 2006. ISBN 1-56025-849-7 \$26.00.

A New Way to Commemorate Our Colleagues and Teachers

A new recognition program has been developed at the Center for History of Physics. Generous donors can now name significant items in the Niels Bohr Library & Archives Reading Room, Book Stacks and Archives in memory of an esteemed colleague, mentor or friend. Such a gift gives more than once—it will publicly recognize an important person even while it supports our programs to preserve science history. Every penny donated in this way will help build a sustaining endowment, since fundraising and other costs are carried by the American Institute of Physics. Below is a partial list of naming opportunities; please contact AIP's Development Office for more details (301-209-3006; historyfriends@aip.org)

Shelf in the Book Stacks, Reading Room, or Achives

Entire Book Stack **\$1,000.00**
(6 or 7 Shelves). **\$6,000.00**

Income from these endowments will approximately pay for maintaining the cataloging and preservation of whatever goes on the shelf. One can select a shelf or shelves that include a particular historical topic or biographical subject.



A Stair Leading to **\$3,000.00**
the Book Stacks

A very visible form of recognition, similar to what Ellis Island and other public places have done by inscribing paving bricks. Your endowment will help maintain the Reading Room where the stairs are located, and the name of someone you wish to commemorate would be inscribed in this prominent location.

A Well-made, **\$5,000.00**
Comfortable Chair

Offer a seat to a busy researcher! Have a mentor or colleague immortalized through a plaque placed on a chair in our Reading Room.

Helping the History Center Keep Pace with Development

All the Friends of the Center for History of Physics owe deep thanks to the Friends' Development Committee. These innovators, historians and esteemed scientists serve the

Friends through their ideas, advice and enterprise in raising much-needed donations. Each Committee member was selected for their special expertise and insight. Thank you!

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Save Our Physics Heritage

"Individuals can achieve great things, and the teacher of history ought to make this clear to his pupils. For without hope nothing of importance is accomplished." —Bertrand Russell

Remember the Center in your estate plans—your bequest helps keep the past alive. For more information, please contact:

AIP Center for History of Physics
One Physics Ellipse, College Park, MD 20740
Call 301.209.3006 or e-mail: historyfriends@aip.org

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Visit our Legacy Circle at www.aip.org/historymatters
AIP is a 501(c)(3) organization.

Niels Bohr and grandson Christian Bohr

Academic Partners

Departments of physics, astronomy and allied sciences have a new way to help preserve the history of our fields. In response to a trial solicitation, many have pledged to support the Center's endowment through a small annual donation for the next five years. These Academic Partners will be recognized in *Physics Today* and other publications on a regular basis, and with the success of this trial we are now inviting others to join.

The Center provides many services to academic departments; for example, the Niels Bohr Library & Archives serves as a central repository for departmental histories and the CVs and photos of distinguished professors. The Center also provides guidance for preserving the papers of important faculty members and works with archives to safeguard departmental records. See how your department can join in supporting our work by visiting www.aip.org/academicpartners/, calling 301-209-3006 or sending an e-mail to historyfriends@aip.org.

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