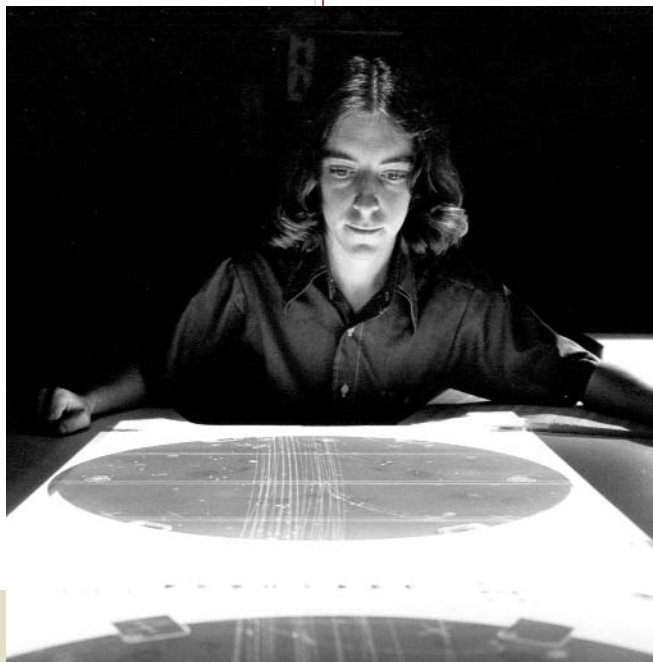
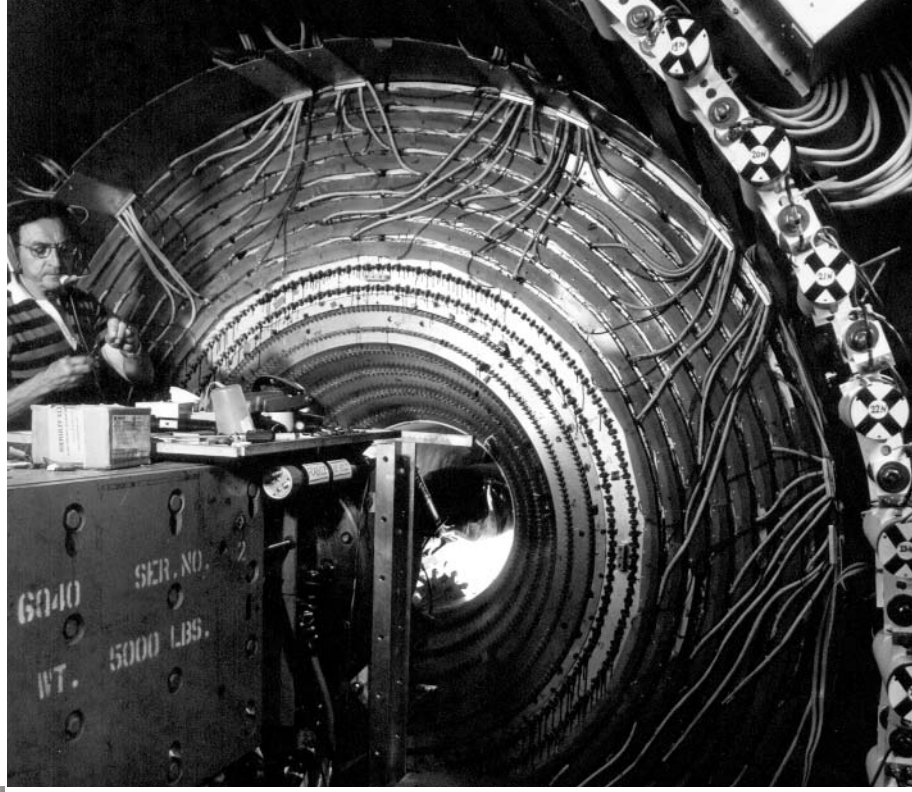


1977-1981

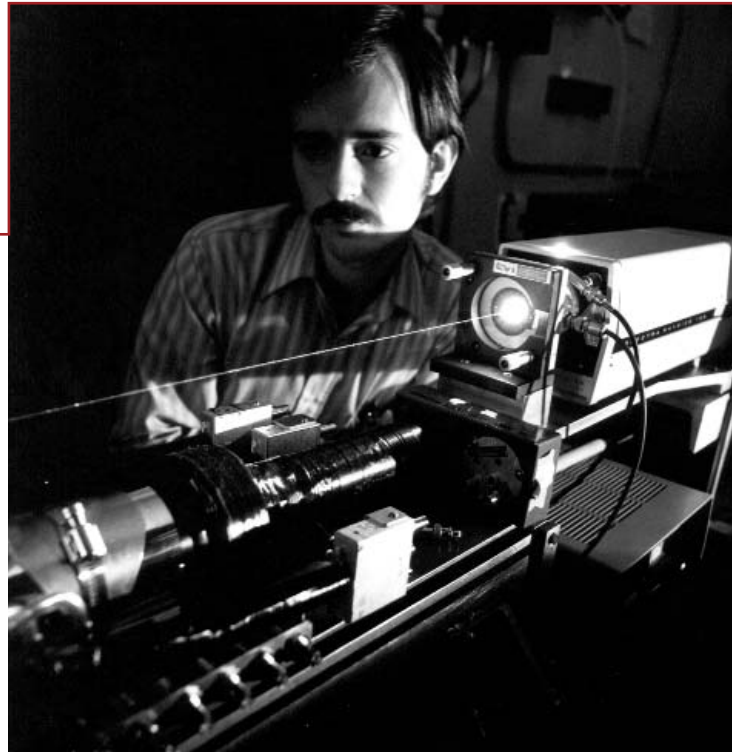
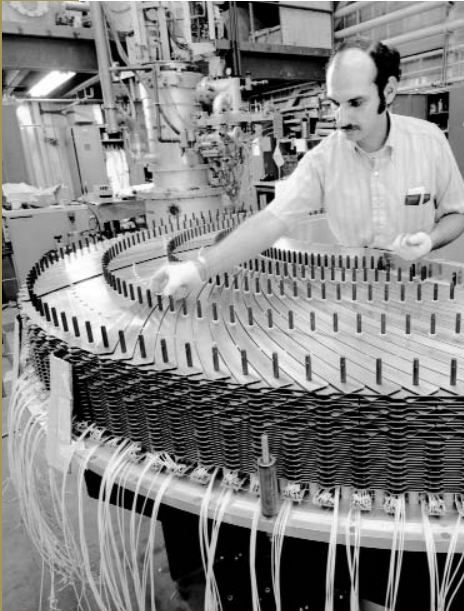


Joe Faust photos of SLAC staff and users at work, 1977-1981.

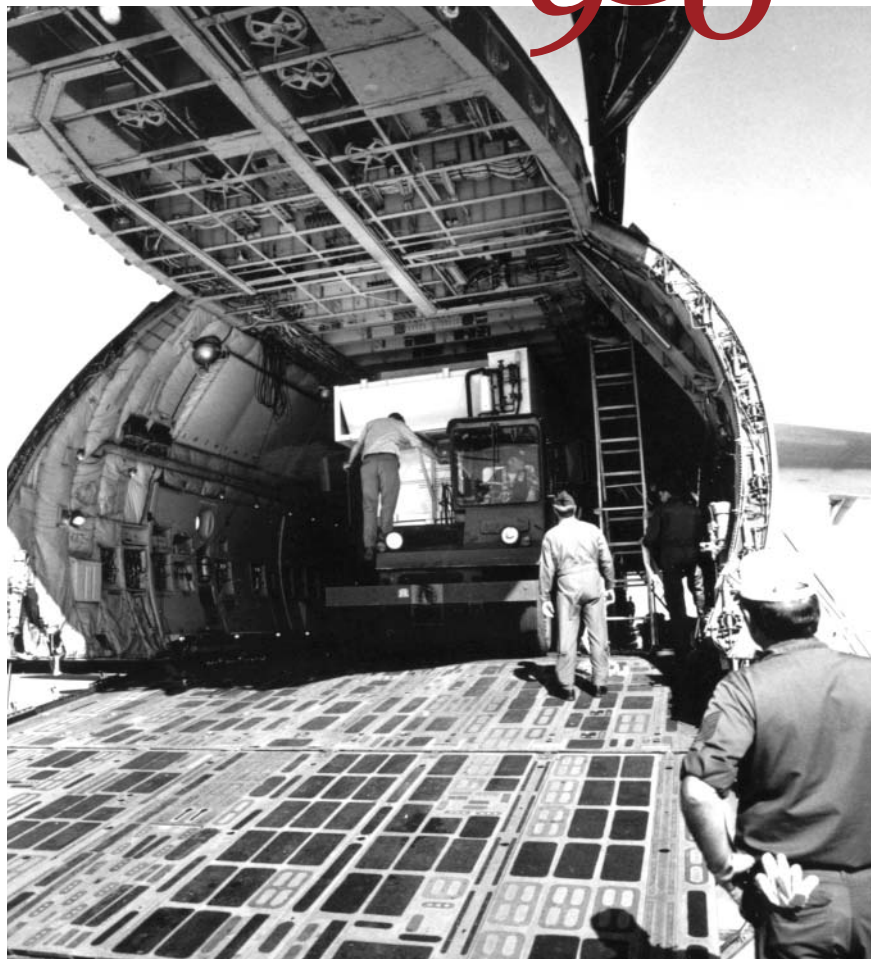




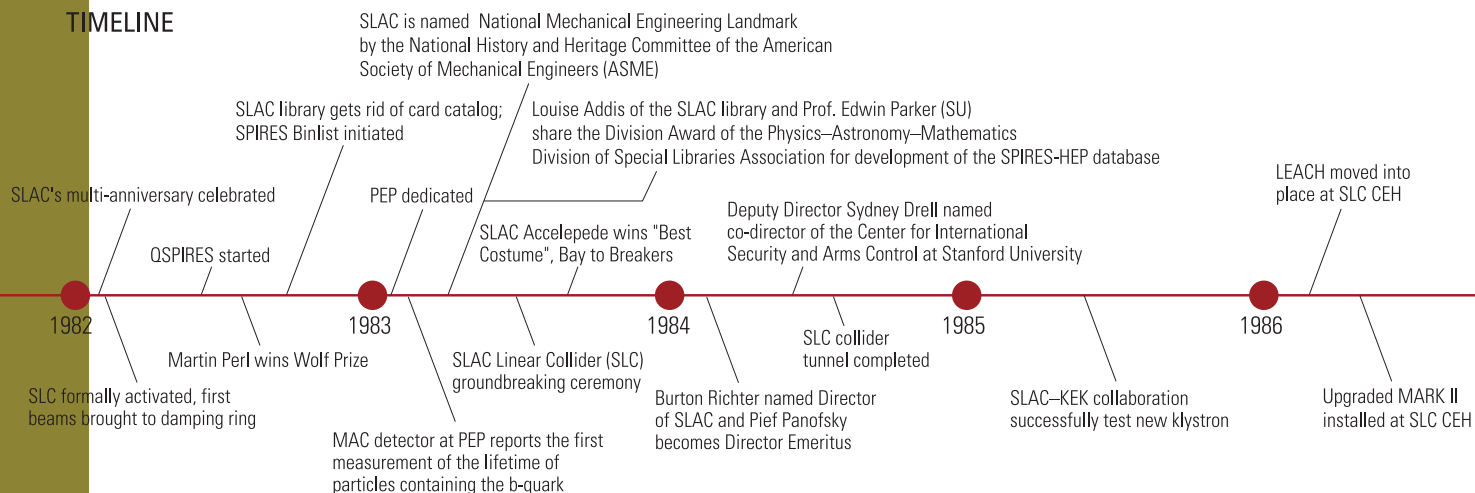
Joe Faust photos of SLAC staff and users at work, 1977-1981.



The Crystal Ball detector was shipped from SLAC to DESY in Frankfurt Germany on April 17, 1982 on a US Air Force C5A plane. After four productive years at SPEAR, the detector was installed at the German storage ring, DORIS, which ran at an energy between that of SPEAR and PEP.



TIMELINE



1982-1986



SLAC Linear Collider (SLC) construction in 1982. A 600-meter-diameter loop at the end of an upgraded 3-kilometer-long linac, the SLC is a new kind of machine in which electrons and positrons from the SLAC linac are focused to collide with energies up to 100 GeV. Pictured here is the exposed shield of the Beam Switch Yard, awaiting modifications for the new SLC injection lines.

The SLAC "Accelepede" won first prize for costume in the 72nd Annual Bay to Breakers Race in San Francisco on Sunday, May 15, 1983. Thirty-one SLACers and friends costumed in red boxes connected by white ducts ran the race, attended by two volunteer "repair units."



Staff members guide a chamber into the cleaning and electroplating tank in Building 25.

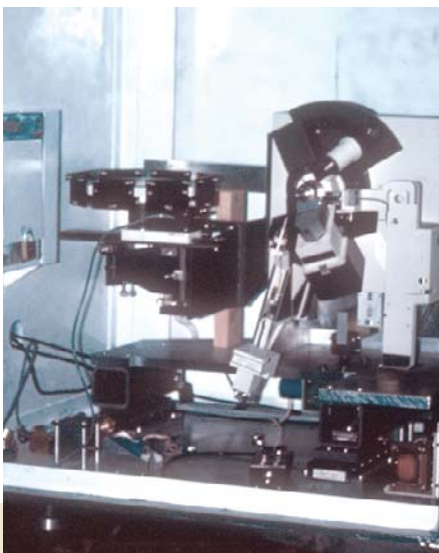


The SLAC Accelepede team, represented by John Winston, Rob Witthaus (front), Bob Gex and Ken Witthaus (upper right) arrived in full costume to donate their first-place prize, an Atari 5200 super-system computer, to Children's Hospital at Stanford.

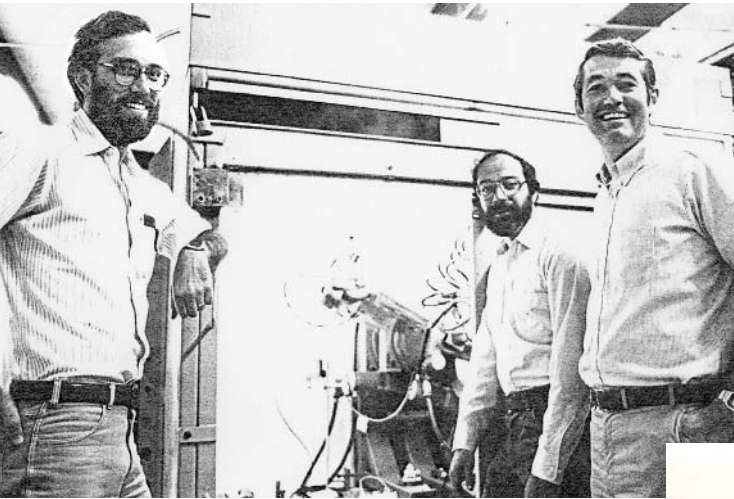


Joe Ballam (Associate Director, Research Division and former Bubble Chamber Group Leader) and Dick Neal (Associate Director, Technical Division) in conversation at the December 1983 retirement party for the sixteen-year-old SLAC 40-inch bubble chamber.

Work in the mid-seventies set the stage for a dramatic growth in the use of synchrotron radiation to measure protein data and solve protein structures. The image to the right is of the basic blue protein from cucumbers and was one of the first structures solved *de novo* using synchrotron radiation. The SSRL beam line 1-5 diffractometer on which these studies were done is shown in the picture at left.



1982-1986



Left to right: David Moncton (Bell Labs), Paul Horn (IBM) and Bob Birgeneau (MIT) participated in scattering experiments at SSRL in 1983.

The Ruth Lykes sails through San Francisco's Golden Gate, loaded with steel for the SLD.

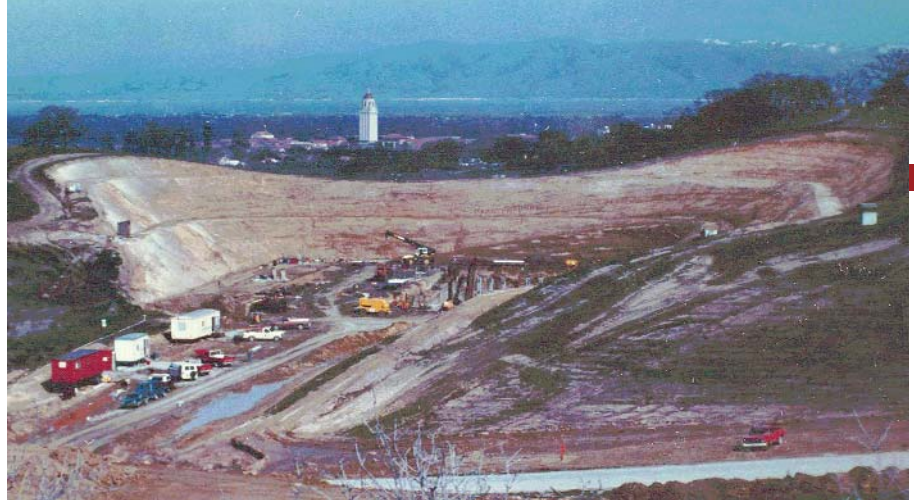


In September 1983 SLAC was named a National Historic Engineering Landmark by the American Society of Mechanical Engineers. This plaque honoring the event was presented to SLAC in February 1984, and is now installed in Building 42.



1982-1986

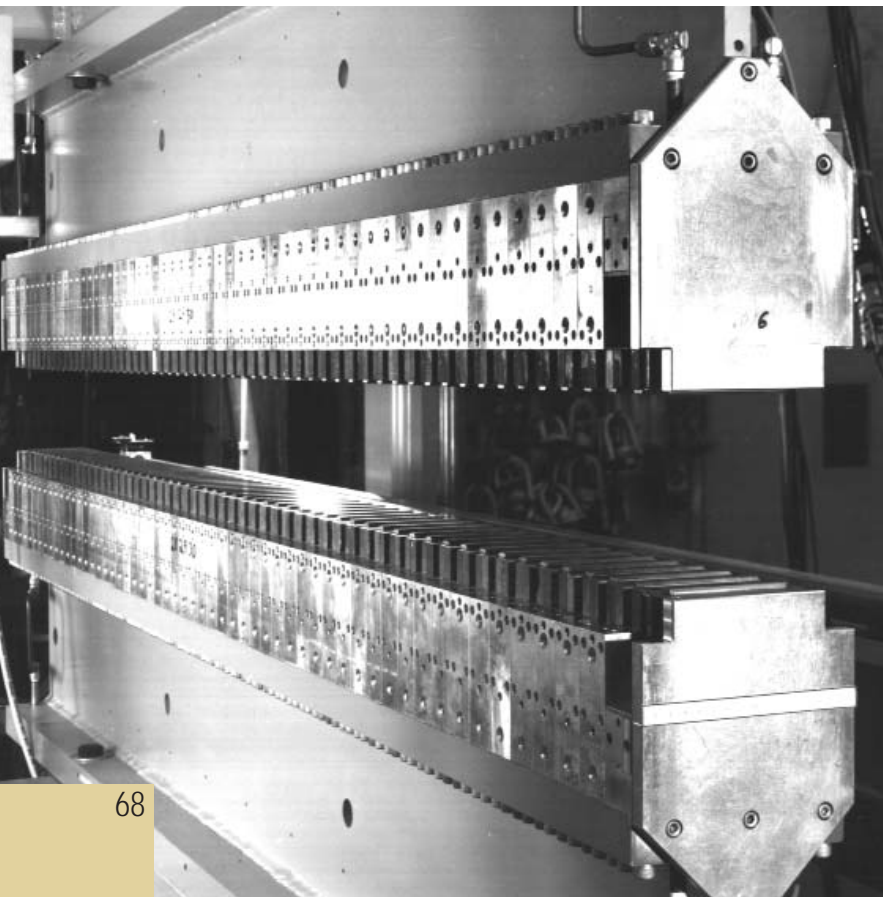
The SLD Central Drift Chamber endplate emerges from aluminum forging in the SLAC Shop.



View of SLC Experimental Hall excavation. Stanford campus and the Hoover Tower are visible at the top of the photo.



Bob Gould's 1984 drawing of the Wizard and his friend celebrating the 24th anniversary of the proposal of "Project M."



The wiggler magnet source for Beam Line 6 in 1984. A two-meter long, 54-pole rare-earth cobalt (REC) and steel hybrid design, it is shown here in its mounting structure. Designed at LBL by Klaus Halbach, BL6 was a collaboration of LBL, Exxon Corporation, and SSRL.



The SLC tunnel construction as it nears its completion on November 30, 1984.



SLD coil delivery truck enroute to SLAC via Interstate 280.

May 1985 signing ceremony for the U.S.- Japan Collaboration agreement.



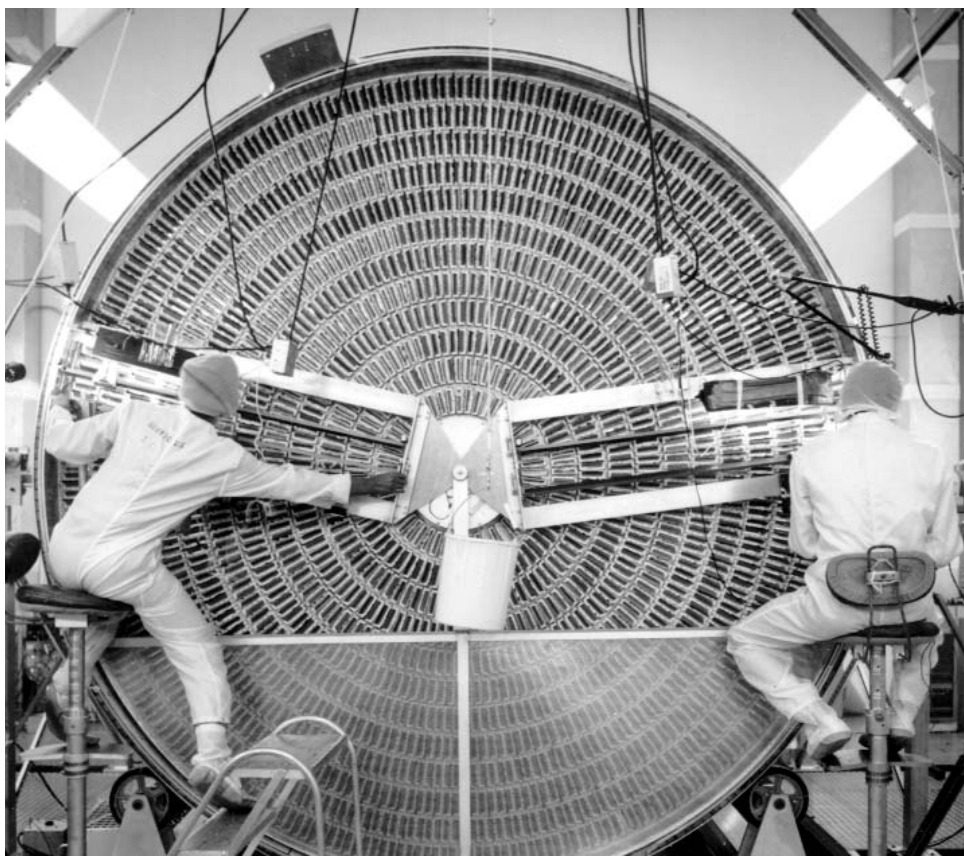
1982-1986



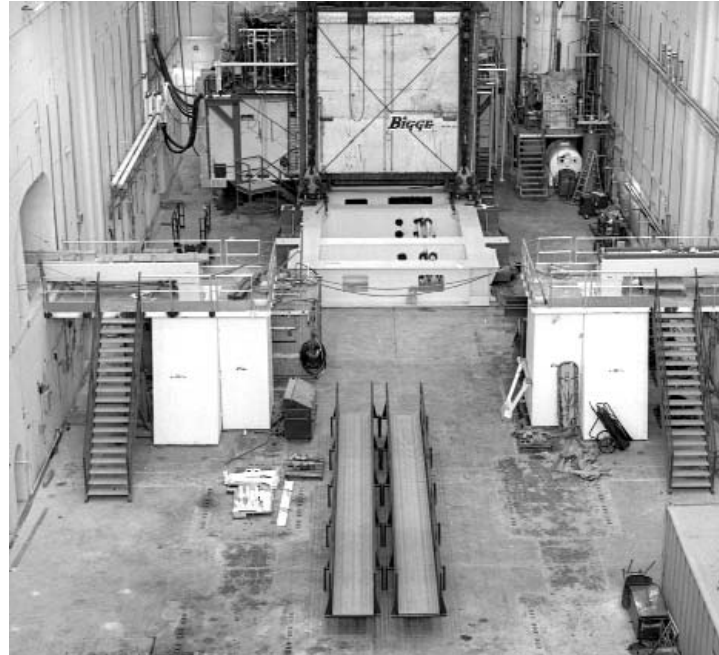
SLC Experimental Hall construction in November 1985.



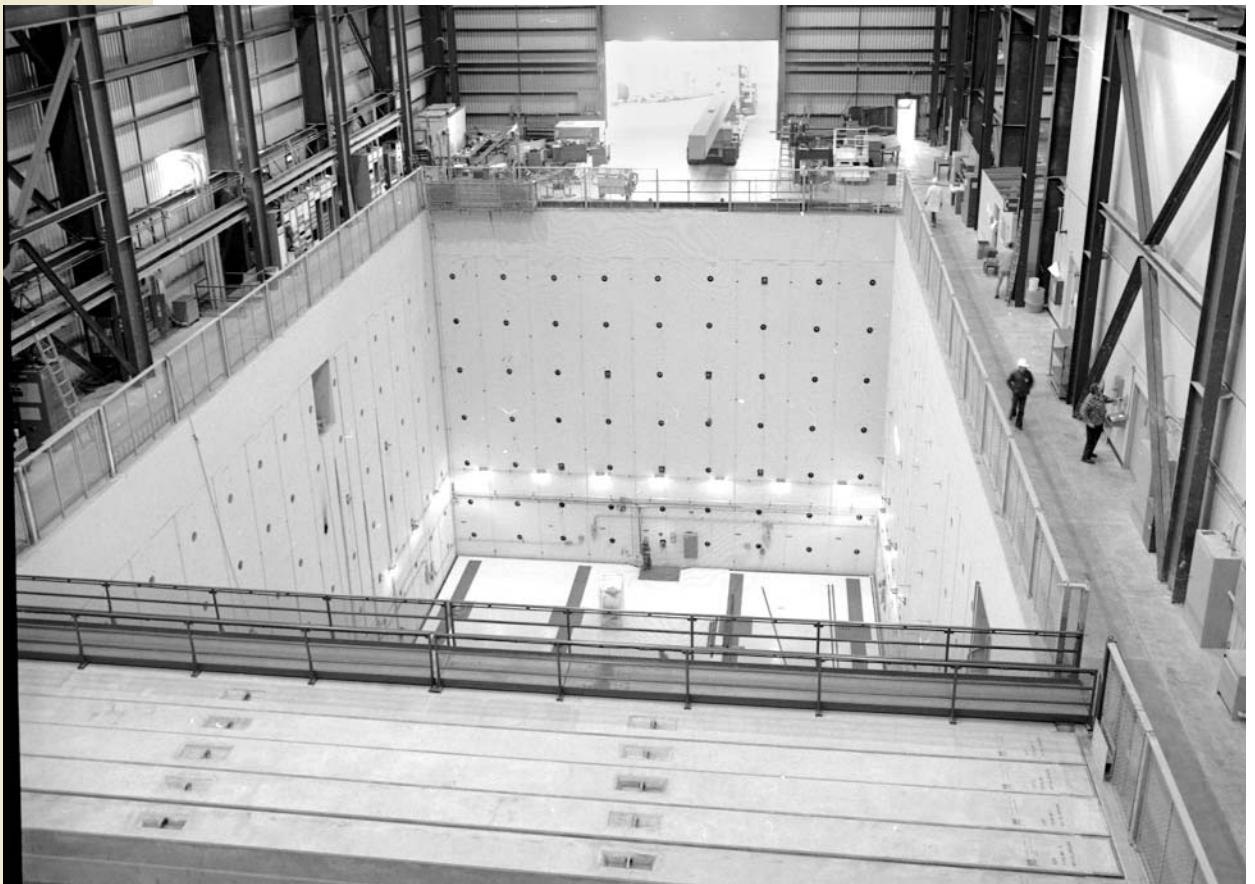
Early 1986 work on rebuilding the Mark II detector central drift chamber for use at the SLC. The old drift chamber had 16 layers of wires; the new chamber included 72 layers and the ability to measure both the time of arrival and the size of the pulse made by the passage of particles.



Interior view of the SLC Experimental Hall, June 27, 1986.



Later interior shot of the SLC Experimental Hall.



1982-
1986

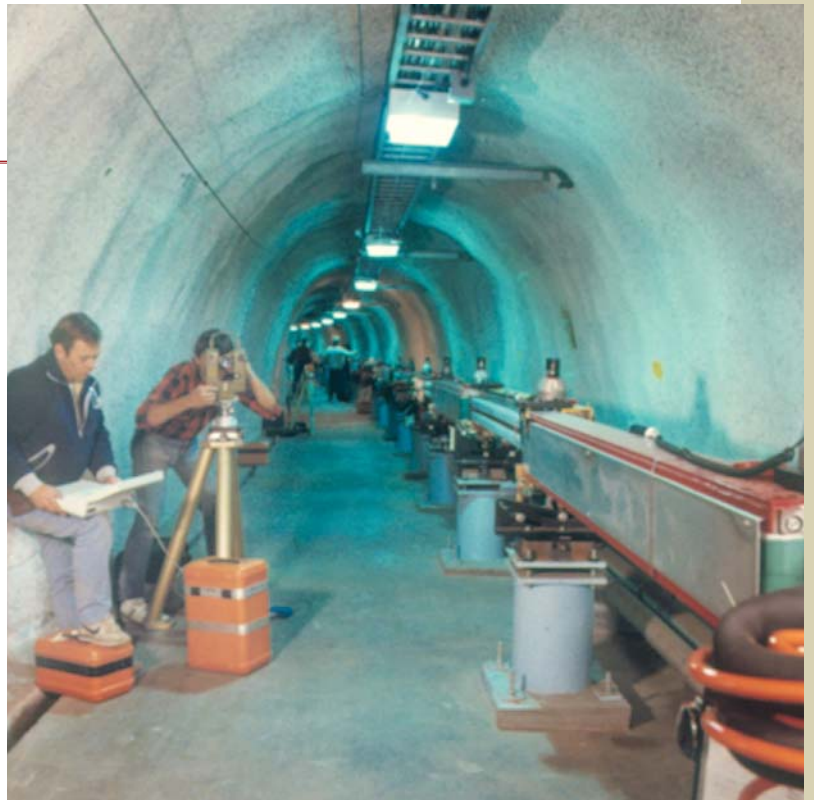


Participants enjoy lunch and conversation at the SLAC Users Conference, November 7, 1986.



SLAC Linear Collider (SLC) under construction, 1986. View of the SLC tunnel as arc magnets are installed. Magnets in the SLC arc are aligned to within 100 microns to ensure precise control of the beams as they are collided.

More views of the SLC arc magnet installation, 1986.

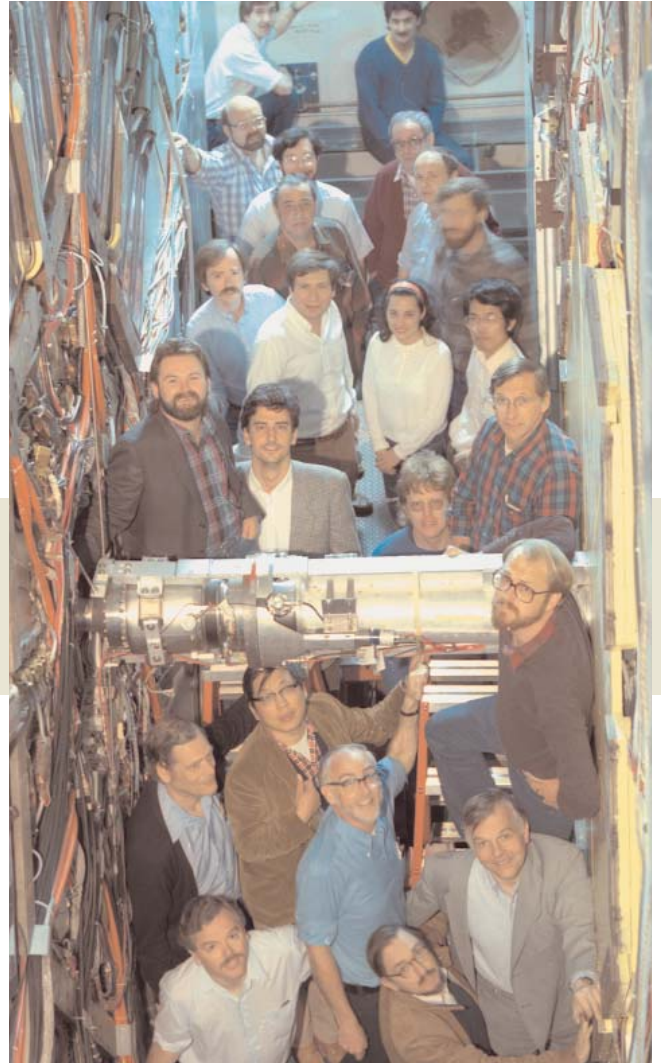


1982-
1986



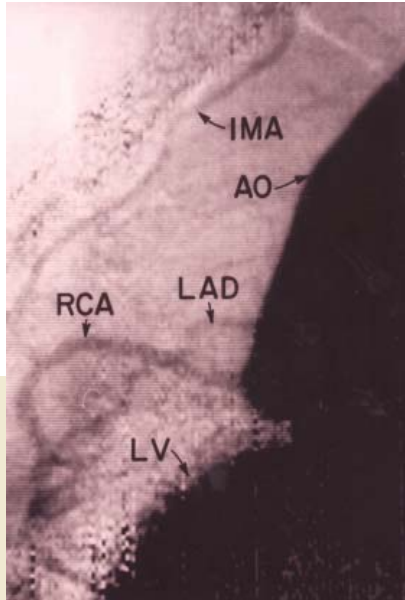
More views of the SLC arc magnet installation, 1986.

SLC north damping ring installation, April 28, 1986

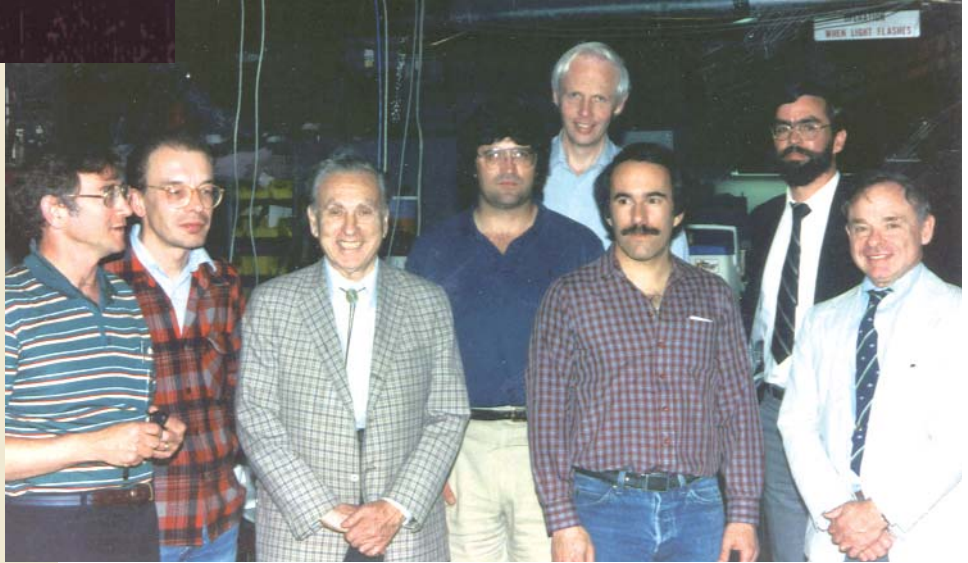


Members of the MAC (Magnetic Calorimeter) Detector Collaboration---from University of Colorado, INFN Frascati, University of Houston, Northeastern University, SLAC, Stanford University, University of Utah, and University of Wisconsin---stand in PEP Interaction Region 4, between the barrel and end-cap calorimeters of the MAC Detector, around 1983. The MAC Detector was one of the major high-energy physics experimental detectors that operated in the original PEP storage ring between 1980 and 1986. From top to bottom, and left to right within each row, are: Alex Read, John Venuti, Bob Messner, Len Moss, Marv Gettner, Don Groom, Francis Muller, Roger Hurst, Dave Wiser, Ted Lavine, Maureen Richards, Takashi Maruyama, Manuel Delfino, Riccardo de Sangro, Jorg Pyrlík, Richard Zdarko, Henry Band, George Chadwick, Nading Qi, Jim Johnson, Eberhard Von Goeler, John Sleeman and Richard Prepost.

1982-1986



The first synchrotron radiation coronary angiogram recorded on a human subject, May 1986. The study is believed to have been the first synchrotron radiation imaging procedure performed on a human being. Since then, some 500 intravenous coronary angiograms have been recorded at SSRL, NSLS, DESY and ESRF, all without complication. (In the angiogram, the following structures are identified: AO, ascending aorta; LV, left ventricle; IMA, internal mammary artery; LAD, left anterior descending coronary artery; RCA, right coronary artery.)



The team of experimenters present at the time of the first human coronary angiography procedure, conducted on SSRL beamline 4-2 in 1986: (left to right) Bill Thomlinson, John Otis, Bob Hofstadter, John Giacomini, Al Thompson, Herb Zeman, George Brown and Ed Rubenstein.



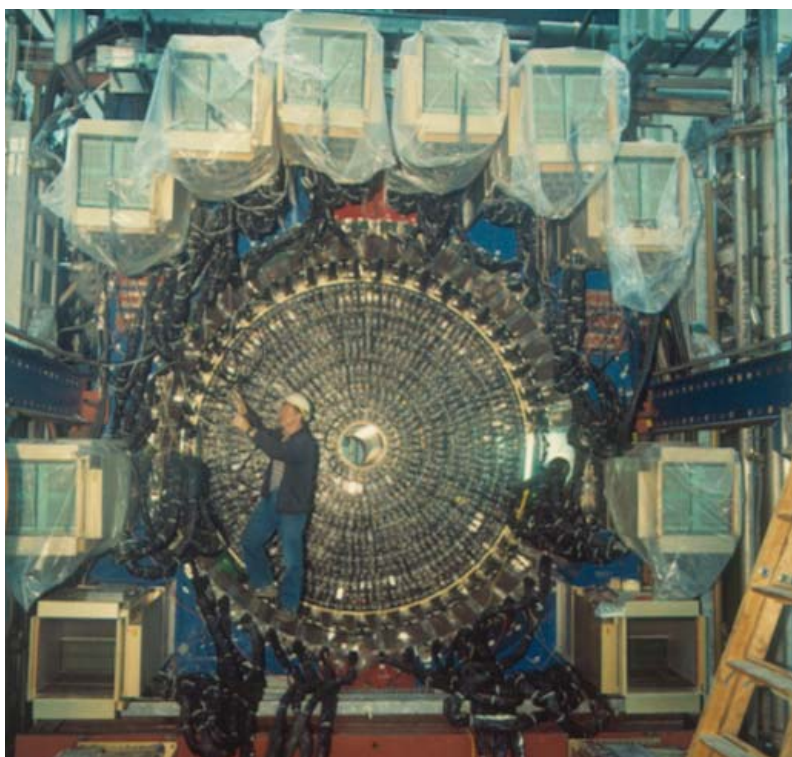
Dave Moncton, a scientist at EXXON, did a number of unique x-ray diffraction studies at SSRL. Dave subsequently became the Director of the Advanced Photon Source at Argonne.



John Seeman stands next to the linac after it had been remodeled in 1986 for use in the SLC.



Main Control Center (Building 05) on September 19, 1986.



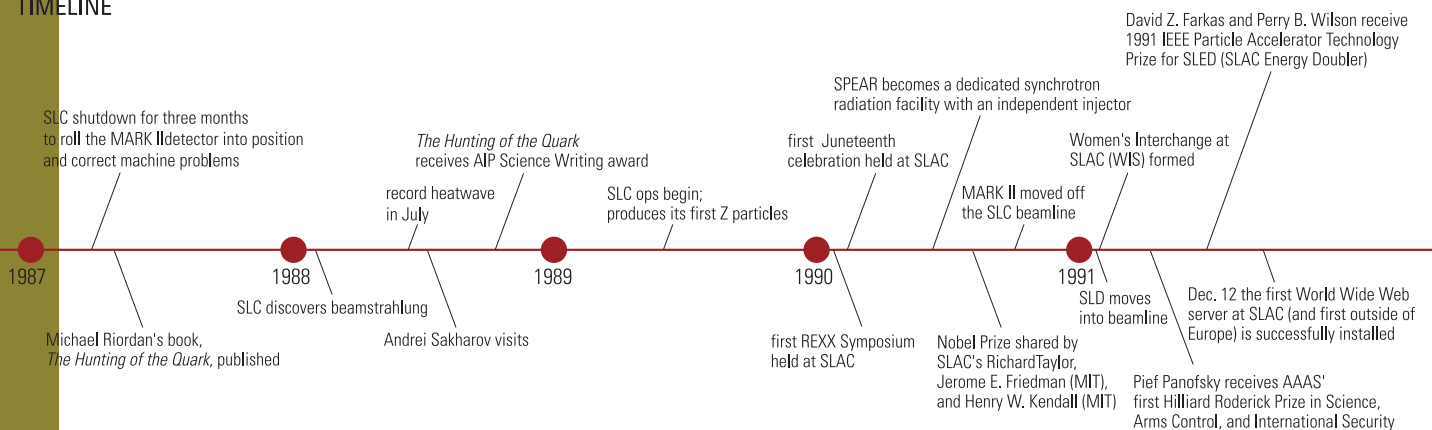
MARK II detector in the SLC Experimental Hall, October 6, 1986.

1987-1991



SLC interaction point construction as seen from above on February 13, 1987.

TIMELINE

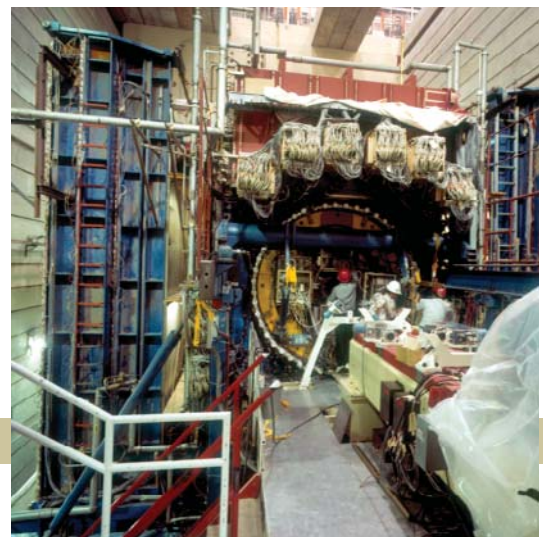
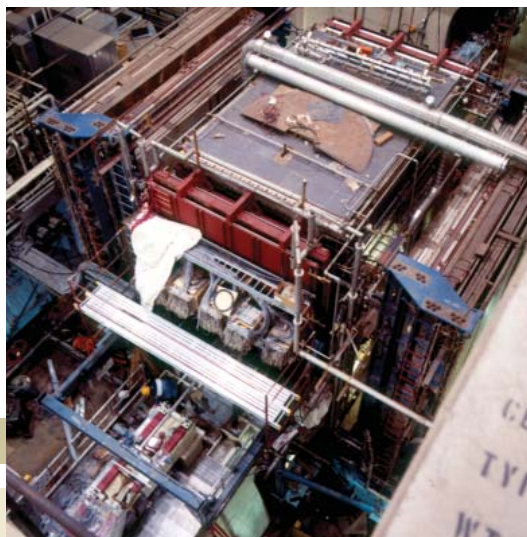


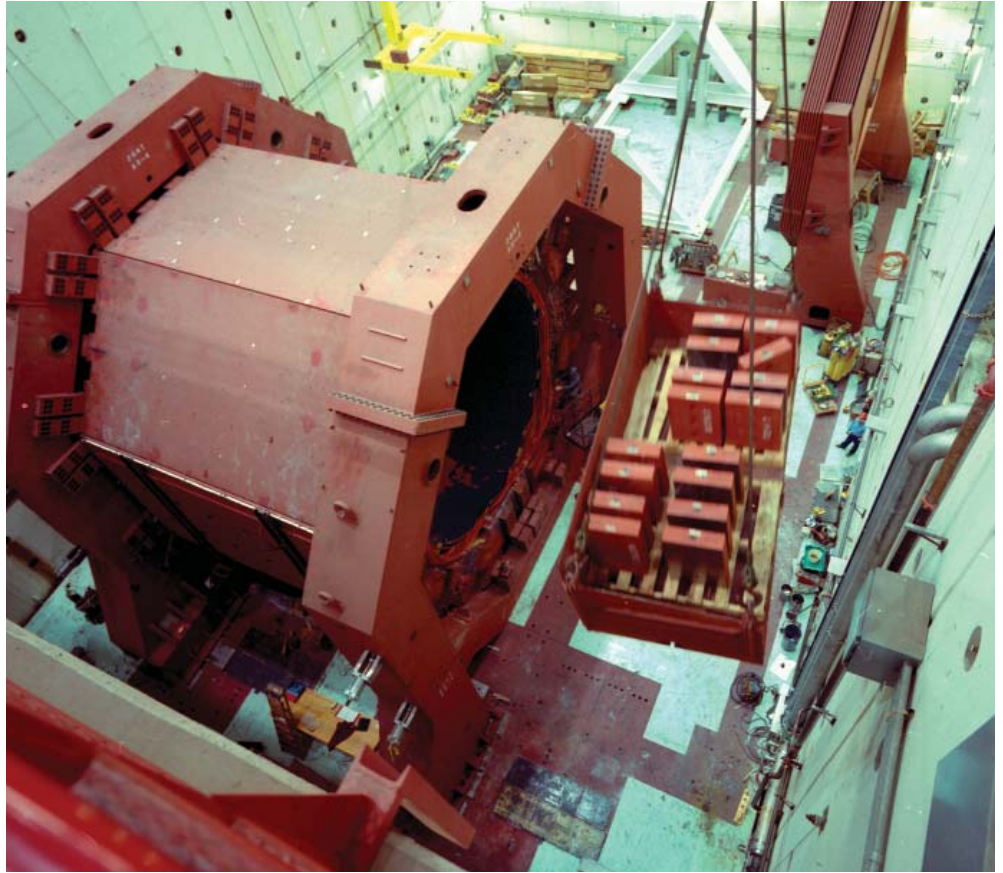
1987-1991



March 21, 1987 SLAC Large Detector (SLD) construction in the SLC Experimental Hall (CEH). The entire detector was built from sections that were liftable by a 100-ton crane.

MARK II detector in place at the interaction point of the SLC, October 22, 1987.





SLD construction progress on November 13, 1987. The large structure between the two arches is the magnet coil.

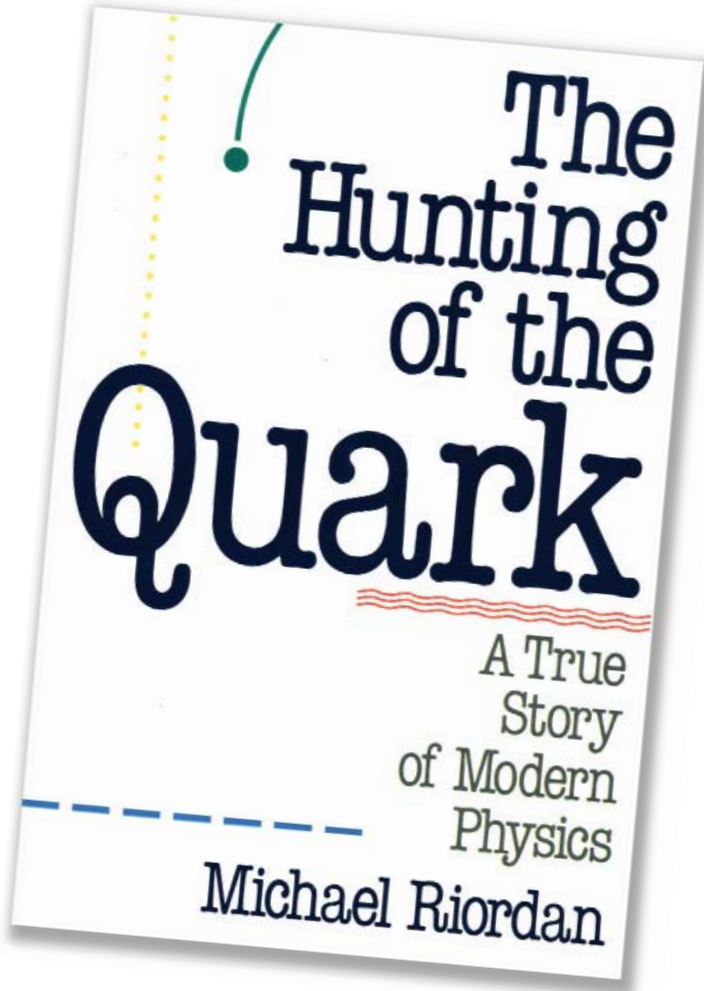
A calorimeter module for the SLD Liquid Argon Calorimeter (LAC) is lowered into the pit in the SLC Experimental Hall at the east end of the SLC, December 8, 1987.



December 21, 1987 progress shot of SLD just after the Liquid Argon Calorimeter has been lowered into place.



1987-1991



The American Institute of Physics' 1988 Science Writing Award went to Michael Riordan's The Hunting of the Quark: A True Story of Modern Physics. The book chronicles both the Friedman-Kendall-Taylor deep inelastic scattering experiments at SLAC and the 1974 discovery of the J/psi particle by two separate experiments (at SLAC and at Brookhaven).

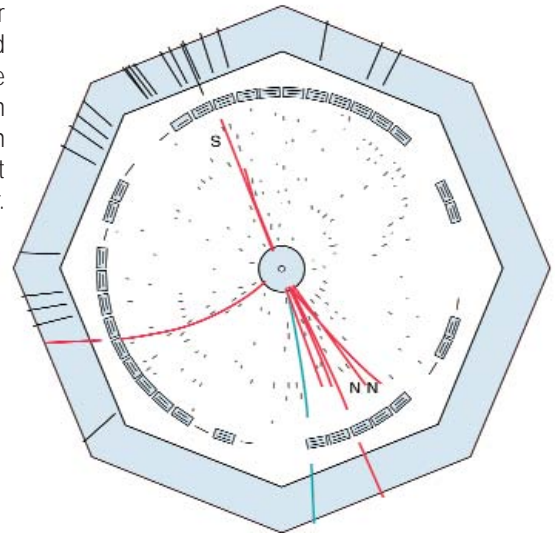


Members of SSRL's Biotechnology Group in 1988 on a 3 a.m. "Wait for the Beam." Left to right: Keith Hodgson, Larry Roe, Paul Phizackerley and Britt Hedman.

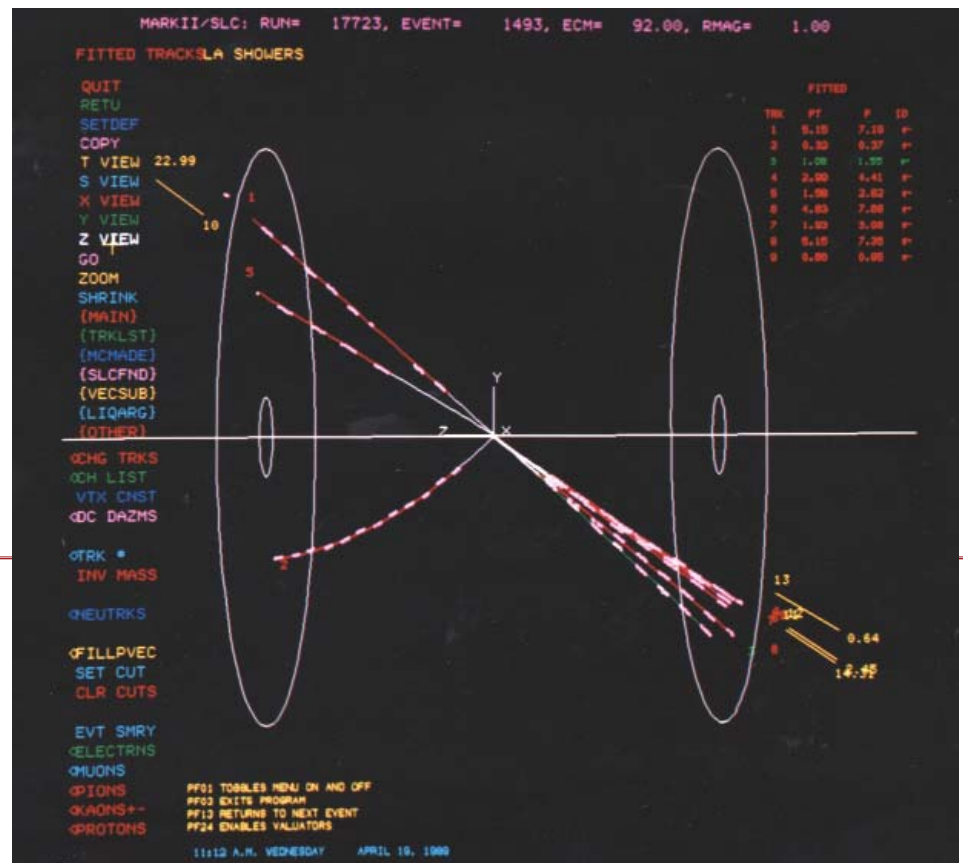
Runners taking off just after noon on November 3, 1989 as the 17th Annual SLAC Race gets underway.



1989: The first Z is created at the Stanford Linear Collider. This is a computer-generated reconstruction of the first Z event recorded by the Mark II detector at the SLC. An electron-positron collision created a Z particle at the center, which decayed into other subatomic particles that left visible tracks in the surrounding detector.



Jonathan Dorfan (Head, SLAC Group C and Spokesman, Mark II collaboration), (center) and Burt Richter (Director), (left) congratulating SLAC staff at a party on April 12, 1989, celebrating the recording of the first Z by the SLD.

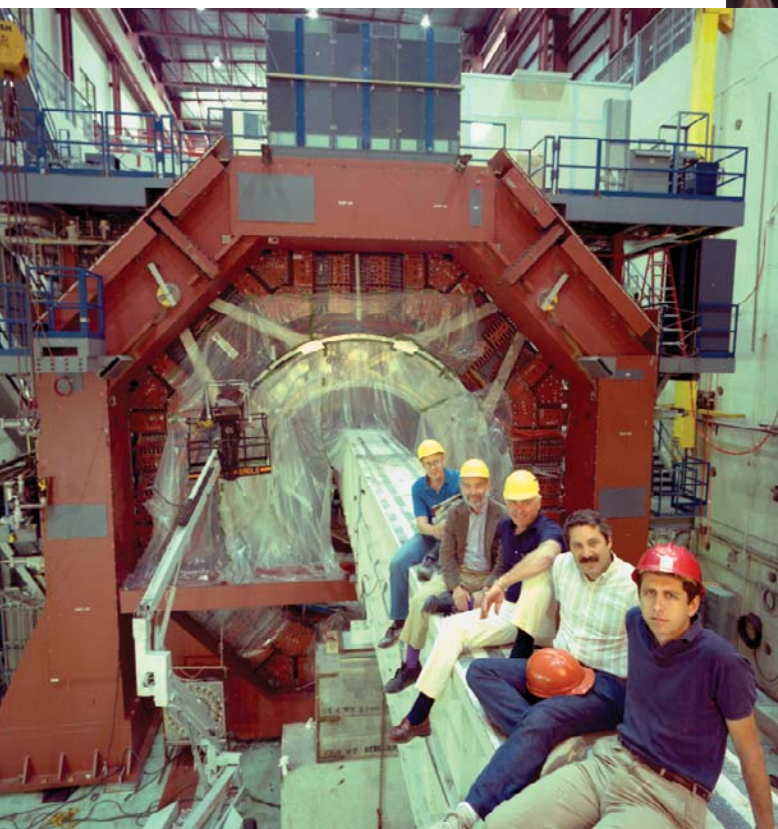


Side-view event picture of an April 19, 1989 Z decay.

1987-1991



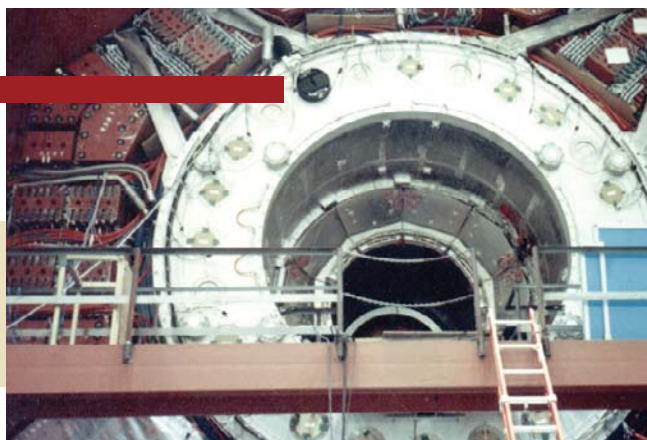
SLAC's then most-senior employee, Jim Pope and his friends and co-workers at his retirement celebration on April 21, 1989. Pope started at Stanford University in 1948 doing electroplating work for Professors W. W. Hansen, Edward Ginzton and research associates Russell and Sigurd Varian.



June 19, 1989: SLD group members pose on the beam housing leading to the detector. Left to right: Knut Skarpas VII, Martin Breidenbach (SLD Group Leader), Bob Bell, Michael Shaevitz, and Dan Alzofon.

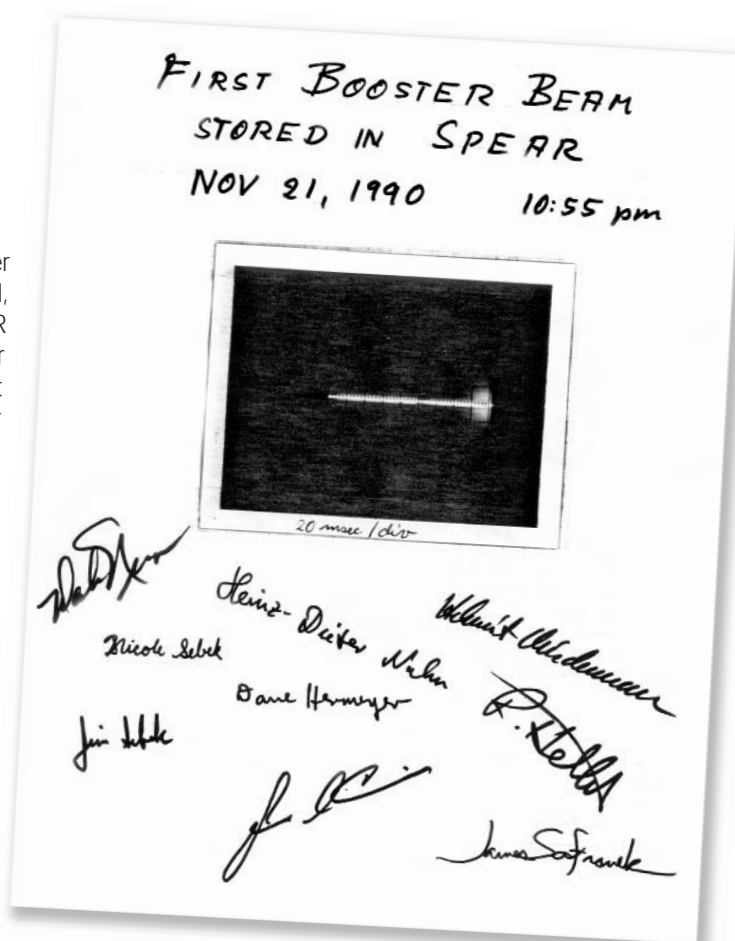
A couple of "candid" shots of SLAC employees at work, taken by Joe Faust on October 5, 1989 for a recruiting brochure. Gunther Haller and Phil Seward (left) working on SLC LAC electronics, and Denise Larsen (right) at work in the SLAC MFD fabrication shop.



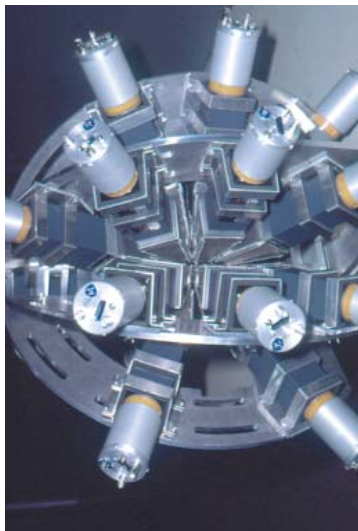


At 5:04 p.m. on Tuesday, October 17, 1989 the Loma Prieta Earthquake struck. Centered about 60 miles south of San Francisco, with a Richter magnitude of 7.1, it caused little damage at SLAC. Safety bracing on the SLD (left) and other equipment and instruments held fast, while contents of some offices, like this one in Central Lab Annex (right) were somewhat shaken.

In 1990 the new 3 GeV SPEAR booster injector was installed and commissioned, delivering an electron beam to the SPEAR storage ring for the first time on November 17, 1990. Finally, on November 21 that year, the electrons from the new injector were stored in SPEAR.



Users on SSRL beamline 7-3 discuss the first results towards understanding the molecular basis for mammalian arsenic-selenium antagonism in January 1998. Left to right: Graham George (SSRL), Roger Prince (Exxon), Ingrid Pickering (SSRL) and Jürgen Gailer (University of Arizona).



Instrumentation developments allowed significant expansion of the applications of EXAFS spectroscopy to a wide range of problems in areas from materials science to biology in the late 1980's. One of the developments was the utilization of single crystal oriented samples. In the photo at left, Professors Hans Freeman (University of Sydney) and Bob Scott (now at University of Georgia) are preparing samples for one of the early single crystal experiments. Another innovation was the fluorescence array detector, enabling study of small samples (such as the single crystals) as well as dilute solutions. Show at right is one of the earliest such array detectors.



Lance Dixon (Theory) rounds third base and winning pitcher "Beejay" Bjorken (Theory) smokes one over the plate in the May 1990 installment of SLAC's annual Theory versus Experiment Softball Game.





A prize-winning team from Technical Publications Department is all smiles after completing their 1.5 mile walk on SLAC's first Fitness Day, May 16, 1990. Left to right: Doug Peckler, Rene Donaldson, Crystal Tilghman, Kevin Johnston, Bette Reed, Sylvia MacBride, Bernie Lighthouse and Vani Bustamante.



Burton Richter, SLAC's Director, hands over the ceremonial "key" to SPEAR to Arthur Bienenstock, SLAC Associate Director, SSRL Division, on October 4, 1990 as SPEAR becomes a fully dedicated synchrotron radiation facility with an independent injector.

A view of the audience at the SSRL Dedication on October 4. Left to right, in front row: Pief Panofsky, Sid Drell, Martin Breidenbach, Helmut Wiedemann, Roz Bienenstock, Herman Winick.



1987-1991



Richard Taylor receiving his Nobel Prize from King Carl Gustav of Sweden, 1990.



1990 Nobel Prize ceremony SLAC attendees. Front row, the Nobel Laureates: Richard Taylor, Jerome Friedman, Henry Kendall. Second row: Arie Bodek, David Coward, Michael Riordan, Elliott Bloom, James Bjorken, Roger (Les) Cottrell, Martin Breidenbach, Guthrie Miller, Jurgen Drees, Pief Panofsky, Luke Mo, and William Atwood. Not pictured: Herbert (Hobey) DeStaebler.

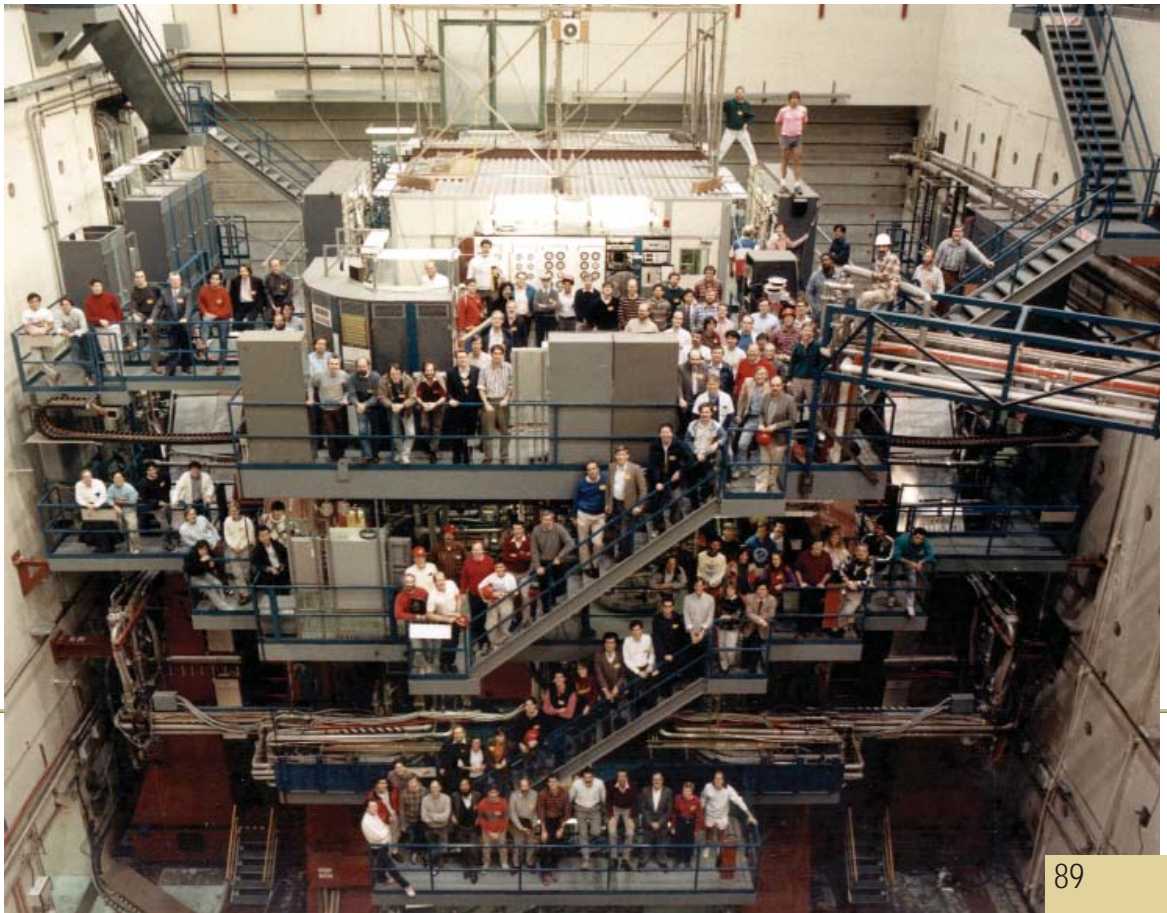
Visit to SLAC on February 13, 1991 of Collaborators of the Final Focus Test Beam (FFTB) project from the Institute of Nuclear Physics (Novosibirsk and Protvino, Russia). Left to right: David Jensen, Alexander Mikhailichenko, Bernie Denton, Dieter Walz, David Burke, Cherrill Spencer, Joseph Cobb, A. Chernyshov, Victor Alexandrov.



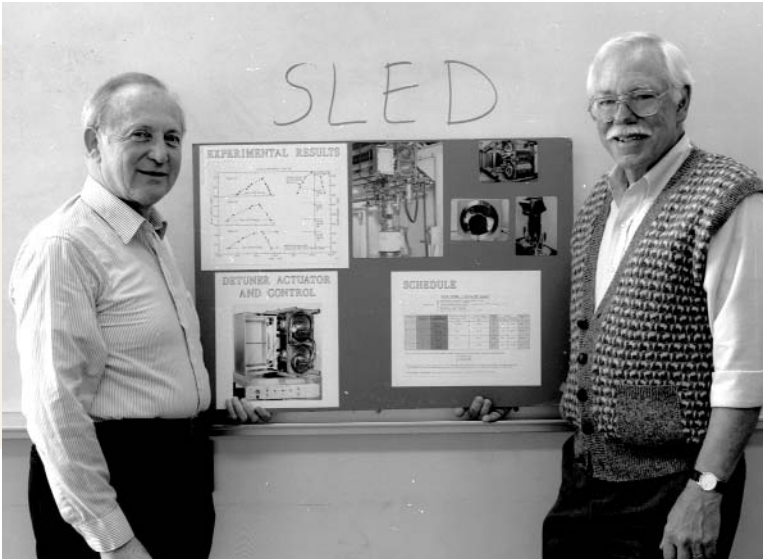


From February 28 to March 5, 1991 the SLAC Large Dectector (SLD) was inched onto the beamline of the SLC. Celebrating the successful completion of the move are: (standing, left to right) Dan Alzofon, Kris Dudley, Gibson Locke, Gerard Putallaz, Vern Hamilton, Phil Seward, Don Peterson, Robert Moore, Jess Gutierrez, and (kneeling, left to right) Rob Cruz, Jamode Caldwell, Beatrice Trautmann, Ray Rodrigues, Jamie Davis and Dave Engesser. Not present: Tom Sansalvera.

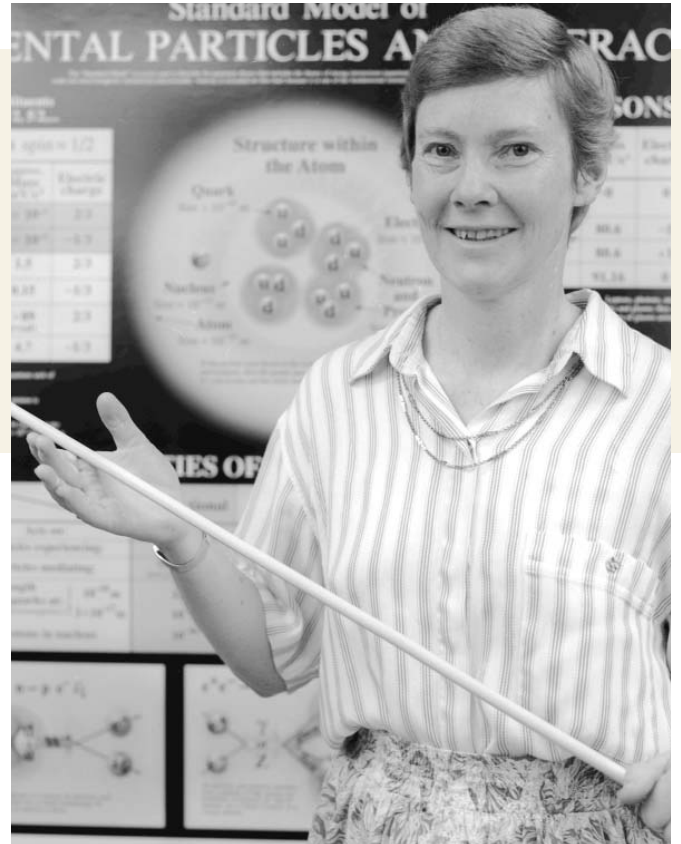
This Harvey Lynch photograph shows the members of the SLD collaboration surrounding their detector.



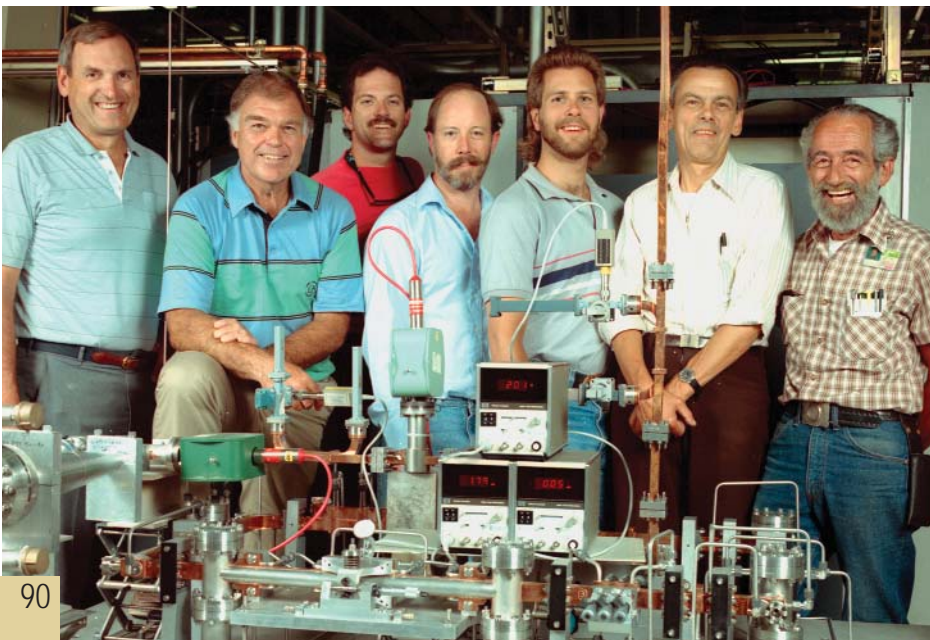
1987-1991



David Farkas (left) and Perry Wilson received a 1991 Institute of Electrical and Electronics Engineers (IEEE) Particle Accelerator Technology prize for their invention and implementation of the SLAC Energy Development (SLED) radio-frequency pulse compression system. SLED boosts klystron peak power, increasing the accelerator gradient.



Helen Quinn, SLAC Theorist and Education Manager, lecturing in 1991. Behind her is the Particle Data Group's (PDG) poster of the Standard Model of Fundamental Particles and Interactions. Quinn, through her work with PDG's Contemporary Physics Education Project, was instrumental in the development and dissemination of the poster.



Group with resonant ring on July 15, 1991. Left to right, Dick Callin, Randy Fowkes, John Eichner, Von Taylor, John Hoyt, Mike Studzinski and Rod Curry.

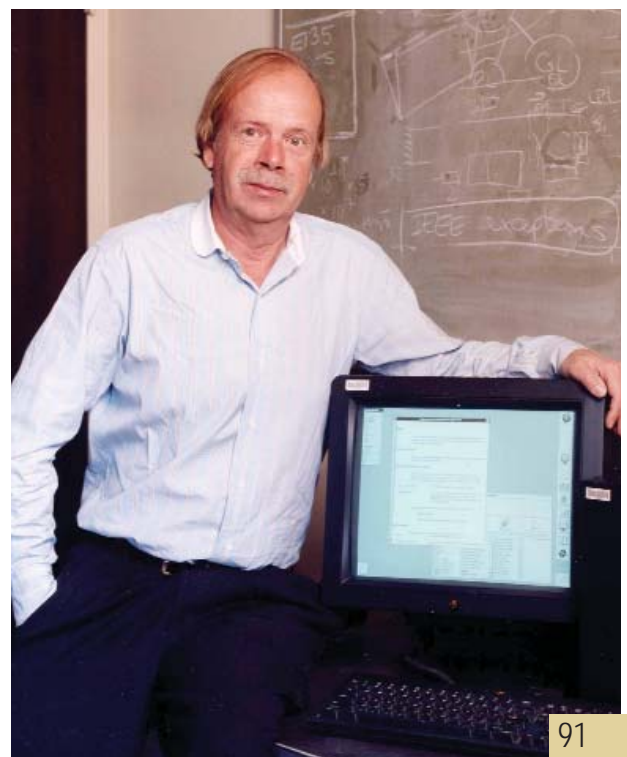


Participants in SLAC's first Summer Science Workshop for Teachers paused to have their photo taken on August 14, 1991.



A U.S. Department of Energy "Tiger Team" visited SLAC in October 1991 to assess SLAC and SSRL environment, safety and health practices and activities. Site liaisons to the Tiger Team included (far left) Hobey DeStaebler and (far right) Al Odian.

SLAC physicist Paul Kunz brought the brand new "World Wide Web" to SLAC in September 1991 when he returned from a trip to CERN. Kunz, along with Louise Addis and Terry Hung, designed a Web server to deliver easy access to the SLAC Library's internationally popular SPIRES High Energy Physics preprint database (which began its life as a paper publication in 1969). Installation of SLAC's Web site, the first outside of Europe, was successfully completed on December 12, 1991. Kunz is shown here in 1998 with the NeXT machine used to demonstrate the first World Wide Web (WWW) browser at SLAC.

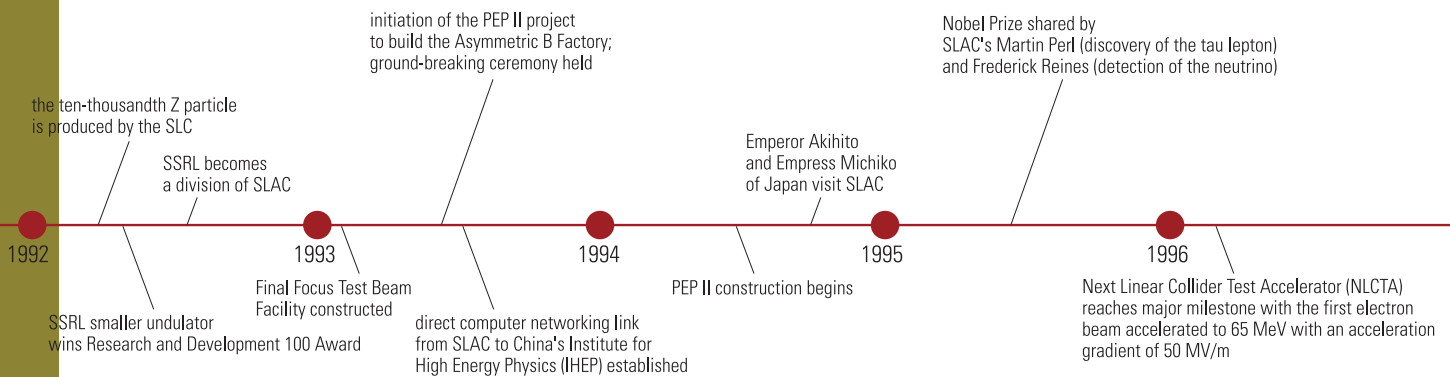


1992-1996

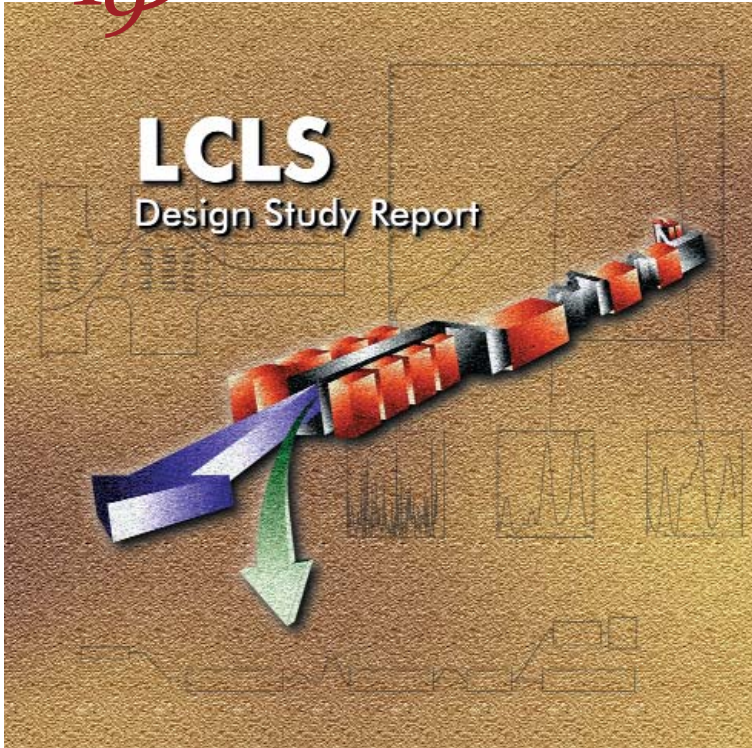


Past and present members of the SLAC Theory group gathered for this group photo in January 1992.

TIMELINE



1992-1996



The Linac Coherent Light Source (LCLS) Project will utilize the last kilometer of the 3 kilometer (two-mile) SLAC linac to drive an x-ray free-electron laser (FEL), which will deliver unprecedented peak power (about 10 GW) and 10 orders of magnitude higher peak brilliance than the previous storage-ring-based light sources. Work on the project started in 1992 and is now on track for delivering the first x-ray beams in 2008. An enthusiastic scientific community is developing to utilize this fourth generation light source.

Fourth-year student at Morehouse College, Jimmie Davis (seated, left) received SLAC's first Outstanding Electrical Engineering Award in 1992 at the Atlanta University Dual Degree Award Banquet. Al Ashley (standing, far left), represented SLAC at the ceremony.



X-ray tomograph of trabecular bone in the human femoral neck taken with synchrotron radiation at SSRL as part of a research program led by Dr. John Kinney of LLNL. The project showed that such visualization can be carried out on living beings. The non-invasive X-ray synchrotron tomography was used to investigate the loss of bone strength in a series of rat studies relevant to the disease of osteoporosis.



Cathy Carr (Mechanical Design) and Jerry Collet (Physical Electronics) fine tune LoadLock in the Polarized Gun Lab, February 15, 1993.

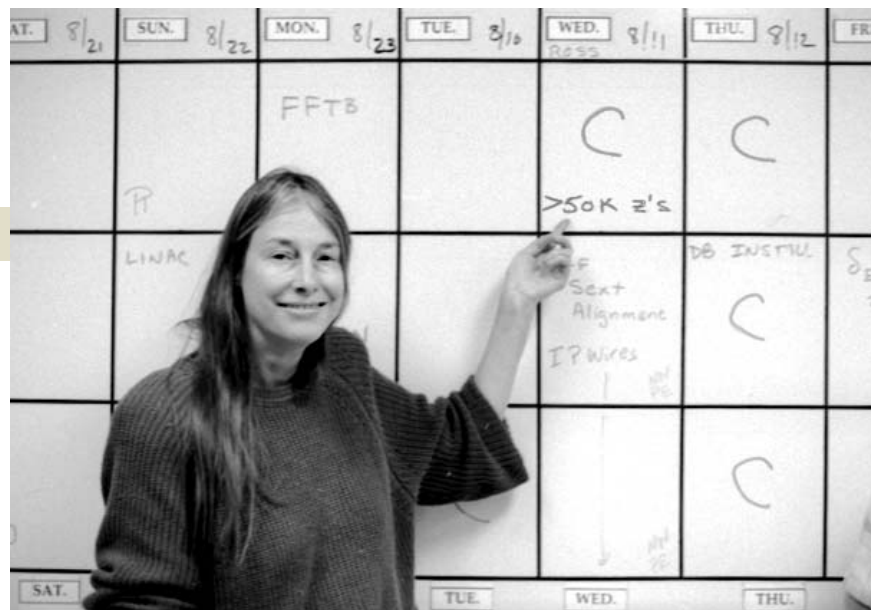


Friendly faces at the SCS Help Desk in March 1993, left to right, back row: Billie Bennett, Cesar Medel, Sasha Chapman; front row: Naomi Brandt, Sharel Gomez, Dave Marcello.

John Cerino, SSRL Head of Operations and Engineering Project Manager for the construction of Beam Line 9, at work on Beam Line 9 in 1993.



1992-1996



After several months of long hours and hard work, SLD and SLC, under the leadership of Nan Phinney, recorded their 50,000th Z particle in the run ending August 11, 1993.



Construction of the Final Focus Test Beam (FFTB) facility, a straight-ahead extension of the SLC shown in the center of this photo, was finished in 1993. FFTB includes magnets and other beam elements constructed in Russia, Japan, France and Germany, as well as the United States. The purpose of this test facility is to investigate the factors that limit the size and stability of the beam at the collision point of a linear collider.



After a prolonged analysis comparing SLAC with a proposed site at Cornell University, President Clinton announced on October 4, 1993 that SLAC was the preferred site for the construction of a B Factory. On January 11, 1994, DOE Secretary of Energy Hazel O'Leary presided over the inauguration of the SLAC B Factory project. Pictured above are SLAC Director Burt Richter, Chief vacuum engineer Julia Weiler and her two-month-old daughter Rachel, Secretary O'Leary, SLAC rigger Elaine Hubbard, and Congresswoman Anna Eshoo. O'Leary and Hubbard are operating a remote-controlled crane that is lifting a 20,000-pound quadrupole magnet from the old PEP storage ring. Partially visible behind Hubbard and Eshoo are California Congressman Norman Mineta and Senator Dianne Feinstein (D-CA). At left are some of the SLAC staff, users, and visitors assembled for the inauguration.



SLAC's Research Division's newest group -- Group K -- was organized in January 1994 with a mixed mission of work on PEP II and on particle astrophysics. Group members: (left to right, back row) Steve Meyer, John Broeder, Gary Godfrey, Elliott Bloom, Ken Fairfield, Bill Tompkins, (middle row) Lynn Cominsky, Han Wen, Andrew Lee, Bill Atwood, Linda Lee Evans, (kneeling) Art Snyder, John Hanson.



1992-1996



The SLAC Hispanic Employee Community (SHEC) group sponsored a Cinco de Mayo celebration in 1994. In the program finale the young people's group, Raices de Mexico, performed Mexican regional dances wearing traditional costumes.

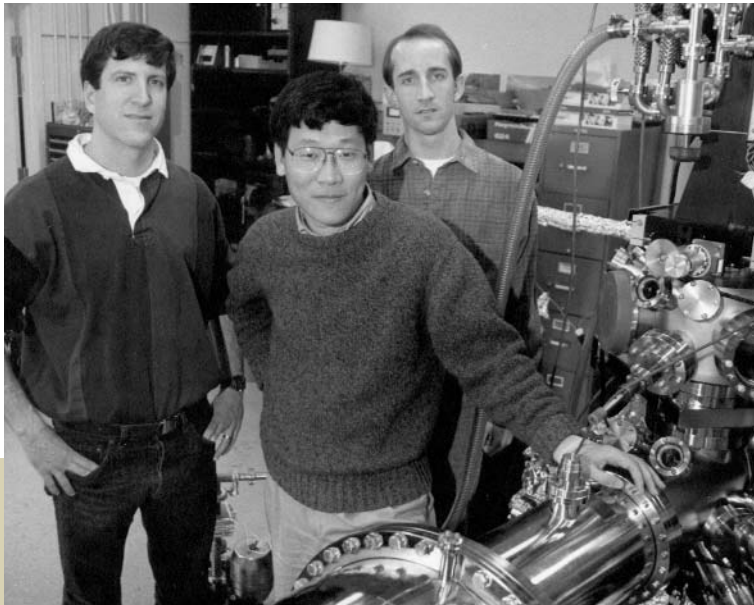


Tsumoru Shintake (KEK) (left) and David Burke (SLAC) in front of a spot size monitor. In May 1994, SLAC's FFTB generated the narrowest beam ever. Led by David Burke, groups from the Budker Institute, DESY, Fermilab, KEK, LAL, MPI Munich and SLAC worked together to produce a beam whose height was only one-tenth the wavelength of light. Their accomplishment proved that the large compression factors required for next-generation linear colliders are within reach.



Celebrating 15 years of collaboration between U.S. and Japanese physicists at SLAC and KEK, Japanese Emperor Akihito and Empress Michiko visited SLAC on June 23, 1994. Shown on a tour of the SLD operations, in the foreground are (left to right) Burt Richter (SLAC Director), Harvey Lynch, Emperor Akihito, and Empress Michiko.

In October 1994, SSRL became a Division of SLAC.
 Left to right: Ron Gould, Assistant Director for Administration; Max Cornacchia, Assistant Director for Accelerator Research & Operations; Piero Pianetta, Assistant Director for Photon Operations; Katherine Cantwell, Assistant to the Associate Director; Keith Hodgson, Assistant Director for Research; Art Bienenstock, SLAC Associate Director, SSRL Division. Missing from photo is Herman Winick, Deputy Associate Director for SSRL.



Dan Dessau, Z. X. Shen and Don King in 1995 at equipment used for high resolution photo-emission studies of high temperature superconducting materials at SSRL.



Mike Rogers (operating computer) and Francis Gaudreault of the Alignment Engineering Group discussing the survey for the laser tracker alignment of magnets in the PEP II tunnel in 1995.

1992-1996



A few of the former students of the 1970 Summer Science Program who took part in an August 18, 1995 celebration of its 25th Anniversary. Left to right: Steve McQuire, Paul Calderon, Al Ashley (SLAC SSP Co-founder), David Ruiz and David Shebley.



Installation of a new beamline (above) and alcove (right) on SPEAR in 1995.





October 11, 1995: Professor Martin Perl received news that he would share the 1995 Nobel Prize in physics with Frederick Reines of UC-Irvine -- Professor Perl for his discovery of the tau lepton in 1975, Professor Reines for the detection of the neutrino. Pictured here at a press conference later the same day, Perl answered reporters questions (left) and posed for photos with SLAC's two other Nobel Laureates, Burt Richter and Richard Taylor.



Santa and his helpers heading out to brighten the 1995 holiday for SLACers. Pulling duty as reindeer are Accelerator Maintenance West owl-shift staff (left to right) Marie Janes, Ben Gibson, Lou Schmidt and Roger Boyer. Bringing up the rear are driver Jim Craft and "Santa" John Ashton.

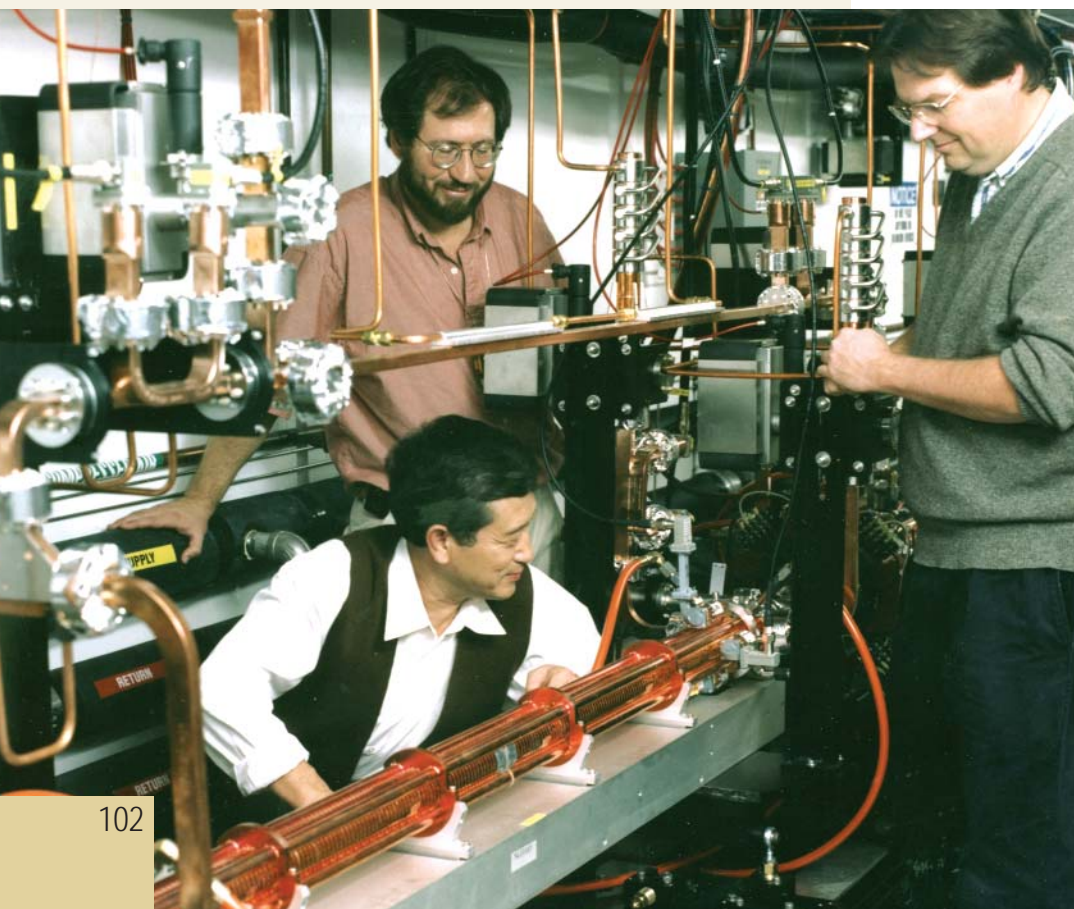


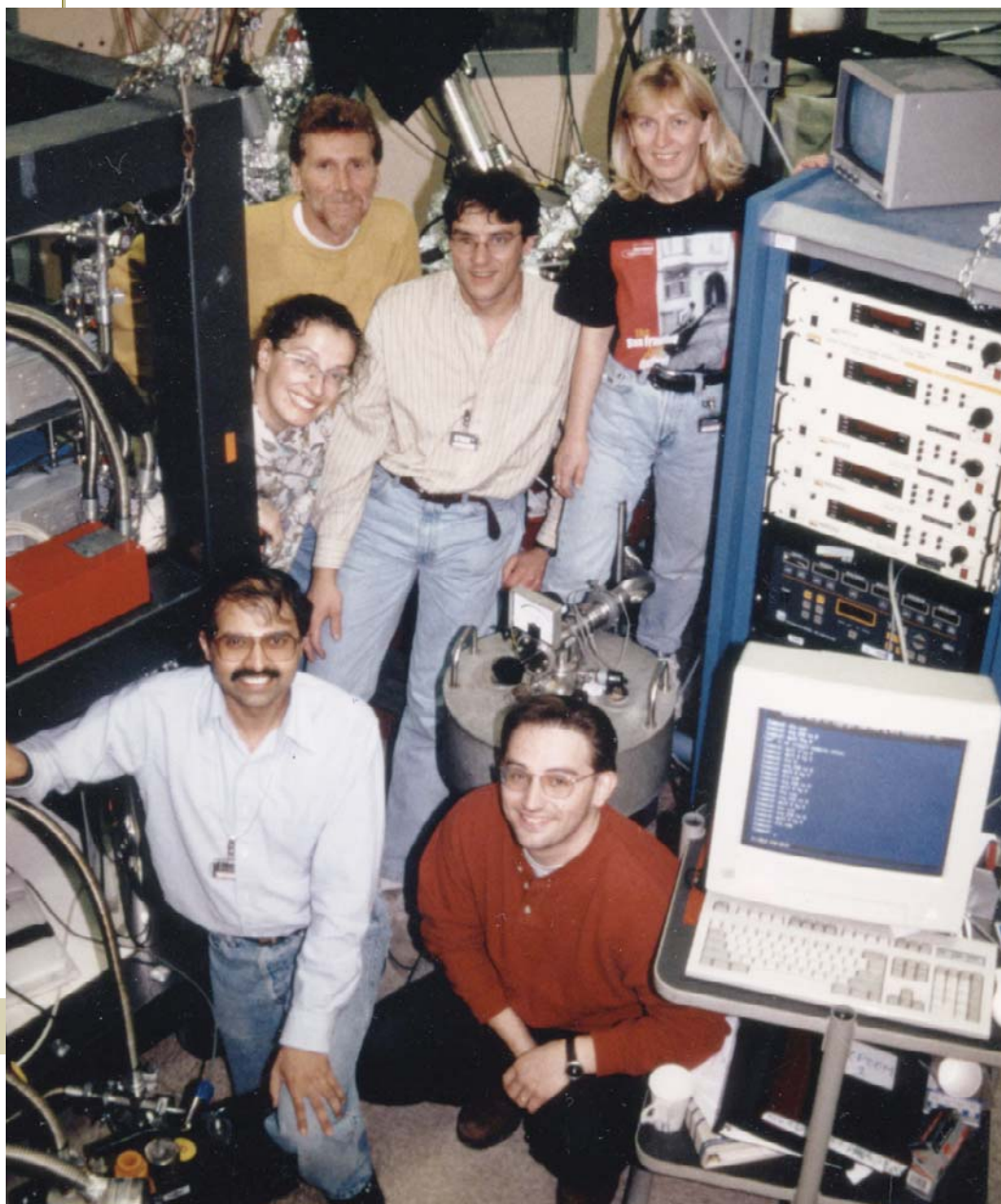
1992-1996



The Next Linear Collider (NLC) group's decorated cake from the November 1, 1996 celebration of a major milestone: the first electron beam accelerated to 65 MeV with an acceleration gradient of 50 MV/m on the NLC Test Accelerator (NLCTA). The NLCTA is a stand-alone linear accelerator that is part of SLAC's ongoing development of X-band (2.6-cm wavelength) accelerator and power-source technology for the Next Linear Collider (NLC).

NLCTA physicists, Juwen Wang, Ted Lavine and Chris Adolphsen, are pictured at the NLC Test Accelerator, next to one of the X-band structures that first demonstrated acceleration to 300 MeV, at 50 MV/m.



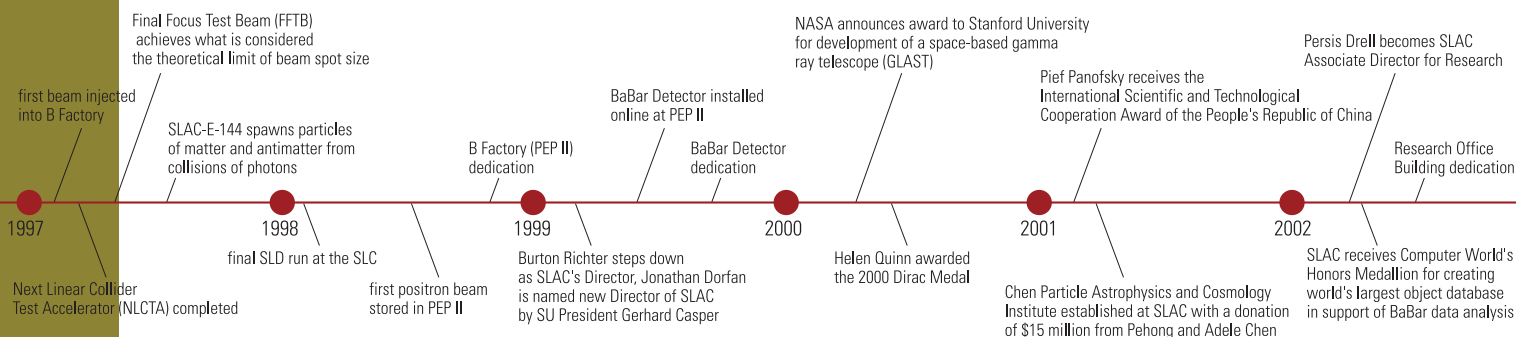


Researchers from IBM and the Advanced Light Source conducting x-ray microscopy (photo-emission electron microscopy) experiments on beam line 10-1. Shown are clockwise from bottom right, Thomas Stämmler, Mahesh Samant, Aline Cossy, Joachim Stöhr, Javier Diaz and Simone Anders.

1997-2002



Cake for SLAC's celebration of 25 years of colliding beams, April 28, 1997.



1997-2002

25-Year Anniversary of Colliding Beams at SPEAR



SLAC Milestone Celebration
Monday, 28 April 1997
2:30 pm on the Green
(center of the SLAC Campus Area)

Front and Back cover of the program for SLAC's celebration of 25 years of colliding beams, April 28, 1997.

Dr. Burton Richter reminiscing on the building of SPEAR:

"Building SPEAR was a saga that makes very interesting reading when you go back over the history. . . In 1963 the first preliminary plan went into the Atomic Energy Commission (AEC). In 1964 the first formal proposal went in at the same time that a ring at the Cambridge Electron Accelerator was proposed. The AEC appointed a committee chaired by Jackson Laslett to look at these two proposals. The committee recommended building SPEAR at SLAC, but felt that things were still too mysterious on the Princeton-Stanford machine [at Stanford]. We should wait a year and see whether we understood that machine better.

"In 1965 the proposal went back in again and the Laslett panel said, Yes indeed they had learned about those things, go ahead. But we had missed the boat; funding for particle physics had begun to get tight. In 1966 the third proposal went in, and the Pake committee made a very strong recommendation for early funding. In 1967 we got tired of writing new books and resubmitted the same book. Still no money.

"In 1968 the High Energy Physics Advisory Panel (HEPAP) strongly recommended early funding. In 1969 we redesigned the machine to make it a lot cheaper, and HEPAP — in what I characterize as a strongly worded recommendation — said to build the damn thing. We didn't get the money.

"In 1970 we reduced the machine further, making it one ring instead of two, and were again turned down for a construction proposal. This time, however, we managed to get permission to build the project out of the lab's ongoing budget; until this time that had been forbidden. This change was an invention of then-comptroller of the AEC, John P. Abadessa. I've had a soft spot in my heart for Mr. Abadessa ever since."

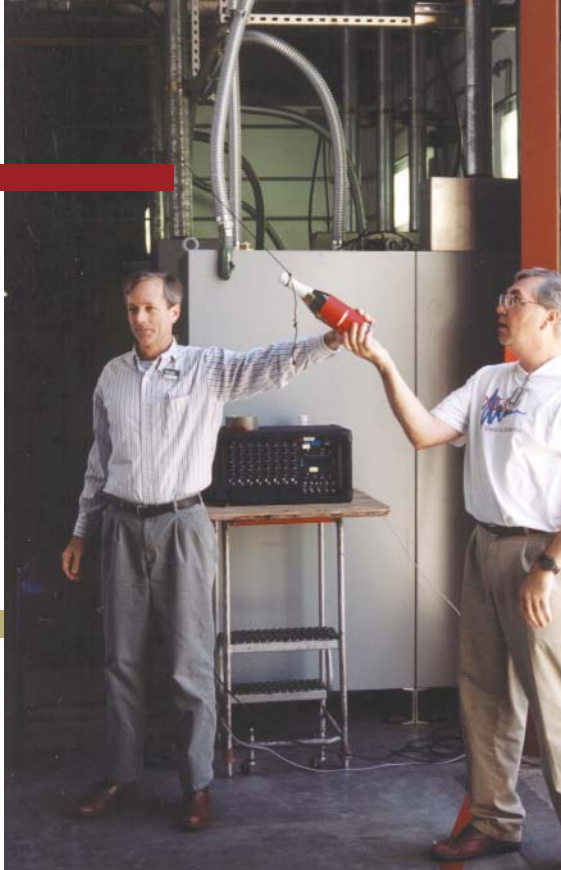
— From the SLAC Beam Line (November 1984)

Sebastian Doniach (Professor and Director, SSRL, 1973-1978) speaking on April 28, 1997 at the 25th Anniversary of Colliding Beams at SPEAR.



SLAC and Stanford University hosted the 6th International World Wide Web Conference in Santa Clara in April 1997. Bebo White (SLAC) and Christine Quinn (SU) co-chaired and SLAC's Technical Publications Department provided support.

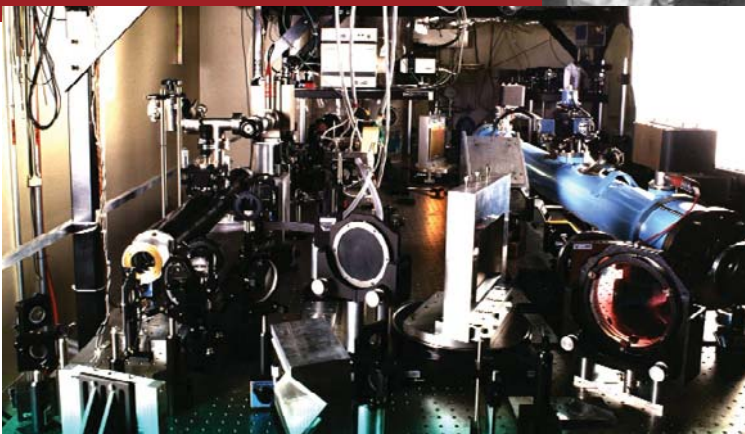




Completion of the Next Linear Collider Test Accelerator (NLCTA) construction project was celebrated with a ribbon-cutting ceremony on June 5, 1997. David Burke and Ron Ruth (left photo) did the honors with non-champagne, and Ewan Paterson (right photo) cleaned up immediately after, as Saul Gold, and Ron Ruth "supervised."



SLAC-E-144 published results in August and September 1997 showing they had spawned particles of matter and antimatter from collisions of photons, the first creation of matter out of light. The experimental group includes (front row) Glenn Horton-Smith, Theo Kotseroglou, Wolfram Ragg, Steve Boege, (back row) Kostya Shmakov, Dave Meyerhofer, Charlie Bamber, Bill Bugg, Uli Haug, Achim Weidemann, Dieter Walz, Dave Burke, Jim Spencer, Christian Bula, Kirk McDonald and Adrian Melissinos. Not pictured: R. Clive Field, Steve Berridge, Eric Prebys, Thomas Koffas and David Reis. Pictured at left is the laser apparatus for the experiment.



1997-2002

August 19, 1997 photo of one of the four stages in the fabrication of the rf cavities for PEP II at SLAC. The 26 cavities supply power to the circulating electron and positron beams. In this stage, blue wax is being removed from water channels

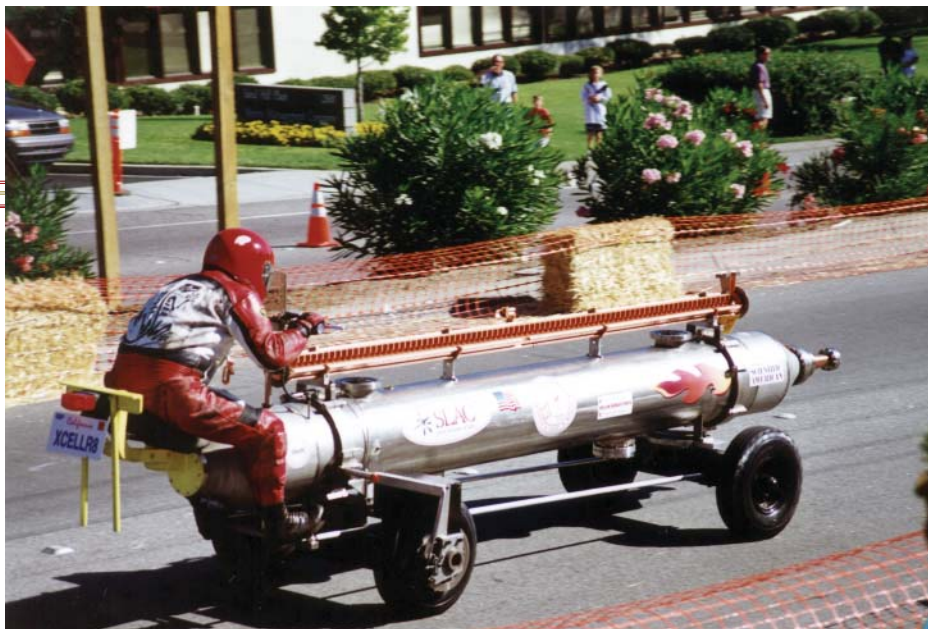
that were cut into the outside of the cavity and then plated to form cooling circuits. After the wax mask has been removed, the remaining ports and flanges are added.



The SLAC S-band klystron, shown here with Daryl Sprehn, was developed between 1992 and 1994 for use in an S-band version of a large collider at DESY (in Germany). Robust and practical, the klystrons are currently mothballed, but plans are afoot to use them in a new accelerator in Eastern Europe.



Onlookers gathered in droves (top photo) for the September 1997 First Annual Sand Hill Road Challenge soap box derby right at SLAC's front door. SLAC's entry "Z Car" (bottom) was sponsored by *Scientific American* magazine, and was constructed by a collaboration of employees from MFD Machine Shop, the Coil Winding Department and TechPubs. SLAC's driver was Eric Bong (Mechanical Engineering).



On December 2, 1997, A U.S. Air Force cargo plane landed at Moffett Field carrying the 15-ton BaBar coil on the final leg of its journey to SLAC. As shown in the photo above, the coil had about a 2-inch clearance in the huge transport plane.



1997-2002



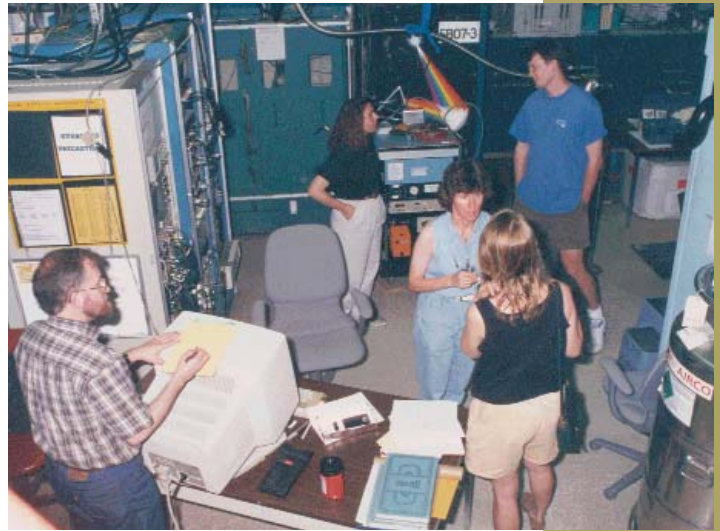
E. Fazli and K. Robinson (SSRL Computer and Networking group), 1997.

C. Troxel, Jr. fine tuning 10-2 beam line optics for the next experimenter.



Thorsten Ressler, Joe Wong and John Elmer (LLNL), performing a time-resolved diffraction experiment on SSRL BL 10-2 in 1997. This pioneering synchrotron work in welding metallurgy was awarded a prestigious William Spraragen Memorial Award in 2001 by the American Welding Society.

EXAFS Experiments on Station 7-3 of SSRL.
James Penner-Hahn (lower left) and his
group with Britt Hedman (center) in 1997.



Suzanne Barrett, (SSRL User Administrator,
1996-1999) and Diane Viera working at the
1997 SSRL User Meeting.



June 30, 1998: The BaBar detector
calorimeter's cylindrical and forward
cone RF shield is installed.

1997-2002



Farewell to VM! SLAC Computing Services staff and retirees gather around on October 5, 1998 for the final shutdown of the VM mainframe after 17 years of service. A farewell party, complete with faux tombstone and sparkling cider, followed completion of the shutdown.

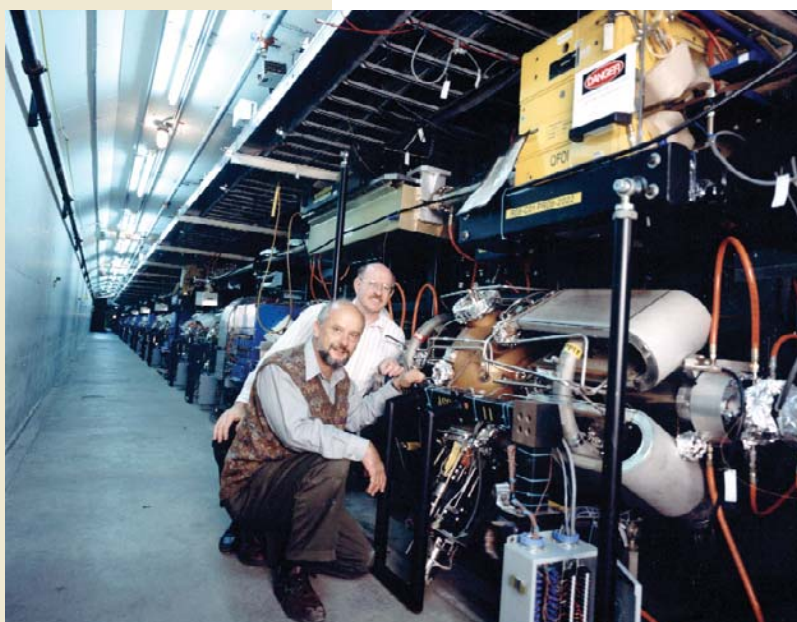




Congresswoman Nany Pelosi, Stanford Provost Condeleeza Rice, U.S. Secretary of Energy Bill Richardson and SLAC Director Burt Richter in conversation at the October 26, 1998 formal dedication of PEP II.

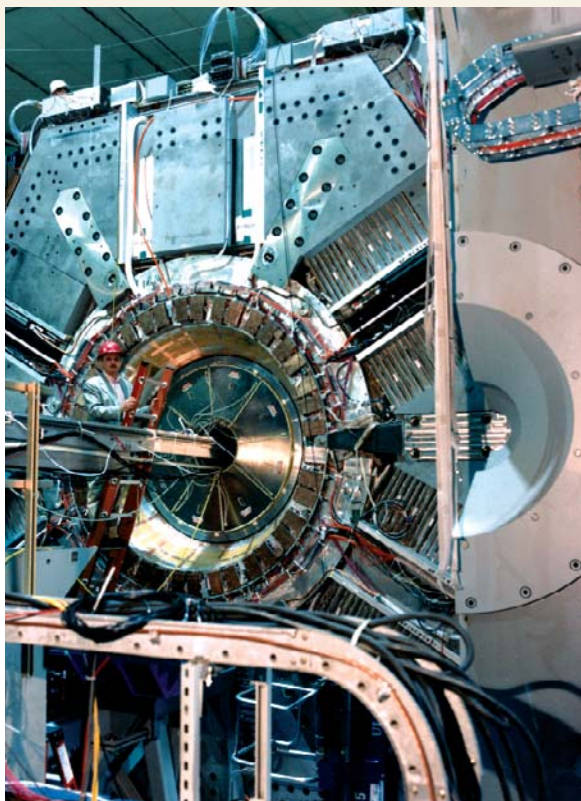


Secretary Richardson speaking at the PEP II Dedication. Behind him on the platform are (left to right) Jonathan Dorfman (PEP II Project Leader), Condeleeza Rice, Burt Richter, Congresswoman Nancy Pelosi, Congresswoman Zoe Lofgren, Bruce Tarter (Director, LLNL) and Charles Shank (Director, LBNL).

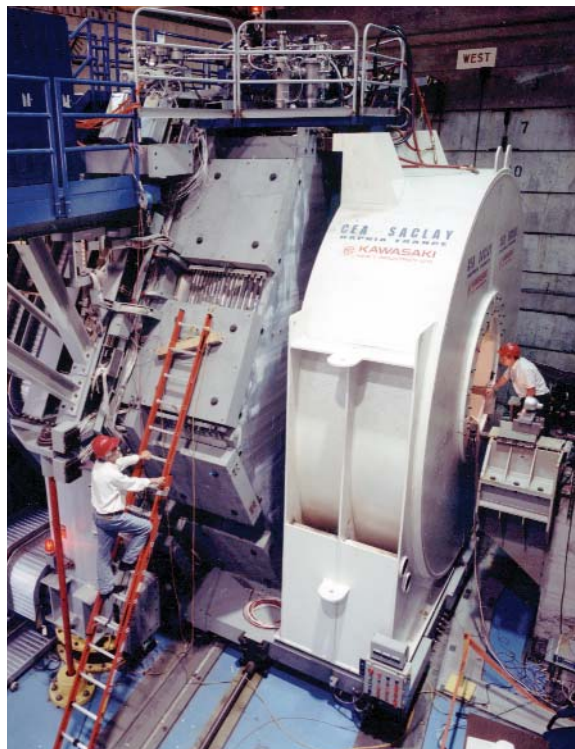


Jonathan Dorfman (PEP II Project Leader) and Pier Oddone (Deputy Director, LBNL) take a moment to celebrate the completion of the PEP II project. They are posed near a radio frequency cavity that powers electrons circulating in the asymmetric rings. The rf cavities were designed and built by LBNL and LLNL as part of their contribution to the B Factory. Dorfman was the project leader who brought the B Factory in on time and within budget. Oddone was the person who had the idea of using an asymmetric collider.

1997-2002



BaBar Spokesperson David Hitlin at the calorimeter of the BaBar detector. This end view shows some of the concentric layers used to track particles.



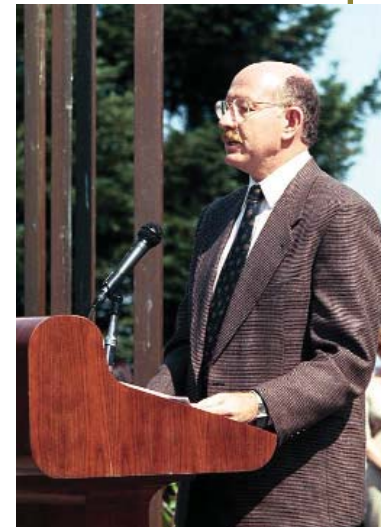
Technicians work on the BaBar detector in preparation for the installation in April 1999.



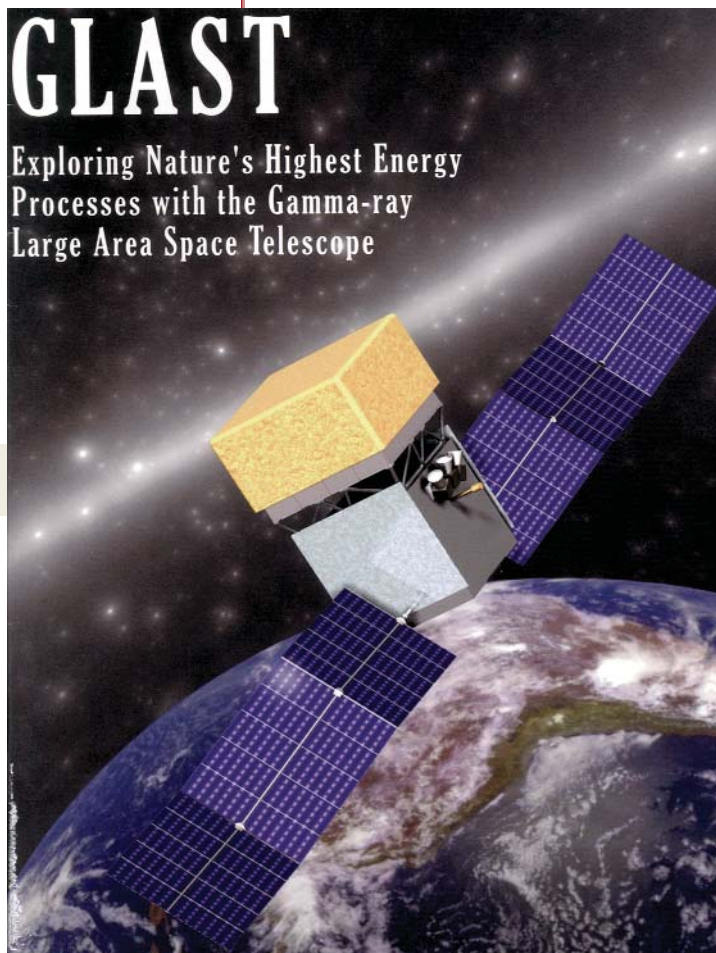
On August 13, 1999 the B Factory at SLAC was dedicated. On the speakers platform that day were Martha Krebs (Director, DOE Office of Science), Jonathan Dorfan (SLAC Director-Designate), and Peter Rosen (DOE Office of Science) (front row, left to right).



Staff and visitors at the celebration sport souvenir BaBar baseball caps.



On September 1, 1999, Jonathan Dorfan was inaugurated as SLAC's third director. Photographed at the inauguration ceremony are (above, left to right) outgoing Director Burton Richter, incoming Director Jonathan Dorfan and Stanford University President Gerhard Casper. Richter presented a "tin cup" to Dorfan during the ceremony for future use in fund-raising.



On February 28, 2000, NASA announced an award to Stanford University for development of a space-based Gamma-ray Large Area Space Telescope (GLAST). The telescope will be built as a collaboration of NASA, the Department of Energy, and five non-U.S. nations. GLAST will be used to observe the extreme universe where electrons and nuclear particles are accelerated to ultra-high energies not attainable on earth, where enormous explosions of mysterious origin light up the cosmos in high-energy gamma-rays on a daily basis, and where dark matter and dark energy dominate. Professor Peter Michelson of Stanford University is principal investigator for GLAST, and management of the project will be centered at SLAC.



A group of Power Conversion Department (PCD) staff discussing an about-to-be-initiated repair job on the klystron power supply main tank in 2000. Left to right: Steve Jenks, Bob Bejsovec, Pete Segura, and Tony Donaldson, Head of PCD.

In April 2000, the SLAC Cryogenics Group assembled for a group portrait.





Some of the Women's Interchange at SLAC's (WIS) planners at a 2001 celebration of the 10th Anniversary of WIS' founding on January 23, 1991. Left to right: Cherrill Spencer, Ann Trautwein, Janice Dabney, P.A. Moore and Joan Winters.



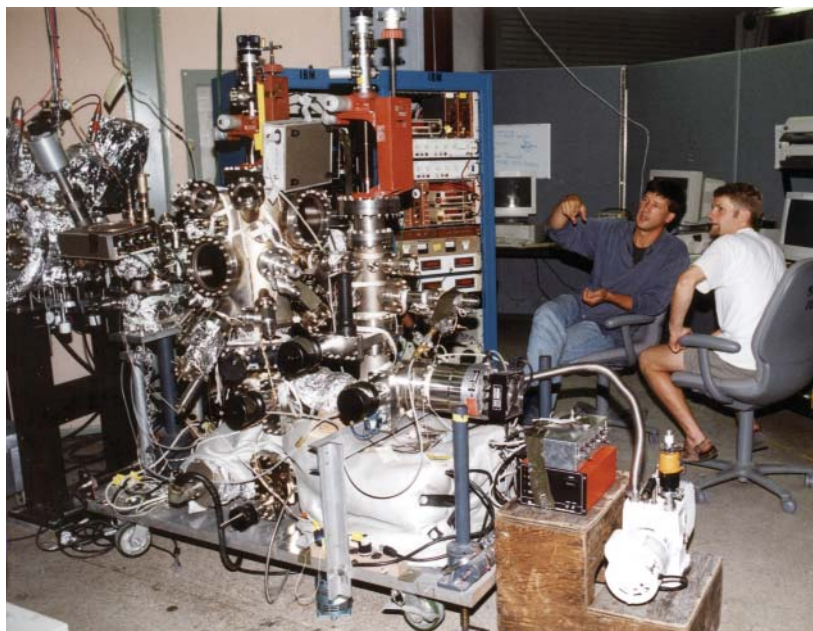
At a press conference held Tuesday, March 6, 2001, SLAC announced the establishment of the Pehong and Adele Chen Particle Astrophysics and Cosmology Institute, funded by a \$15 million donation to Stanford University by the Chens. Pictured above at the press conference are (left to right) Jonathan Dorfman (SLAC Director), Pehong and Adele Chen (donors), Daphne and Pisin Chen (brother and sister-in-law to Pehong and Adele), and John Hennessy (Stanford President). Pisin Chen is a SLAC physicist, and Pehong Chen is the founder and CEO of BroadVision.



Catherine Le Cocq (far right) and Mike Gaydosh (in back) review GPS survey results with Hans Imfeld for reference target placement in a SLAC parking lot in 2001. Monuments will be used to position buildings and other objects on site.

1997-2002

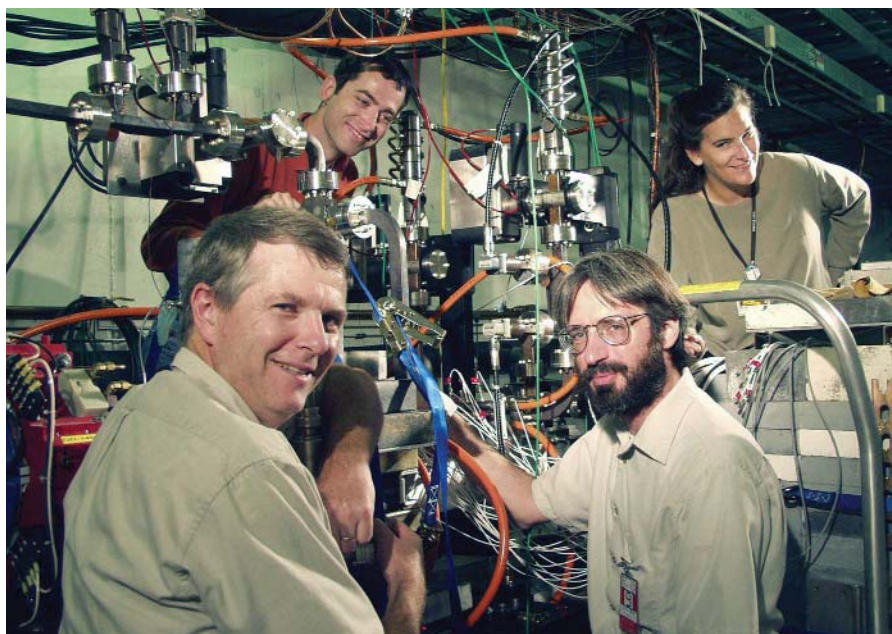
Jan Luning, SSRL staff scientist, explaining to Nik Ingle, Stanford student in Applied Physics, the process of using sample rotation to look for anisotropies in thin films. The 2001 experiment involved growing new gate oxide materials, characterized using NEXAFS.



This 10-sided, multi-media kiosk on Data-Intensive Science was created for a team of nearly 60 people from SLAC and Fermilab by the SLAC SciArts Team--Terry Anderson, Chip Dalby and Michael Hyde. Displayed with resounding success at the Supercomputing 2001 Conference in Denver, Colorado, the kiosk gave the illusion that a three-dimensional detector floated behind the graphs, text and artwork on its information panels.



SPEAR3 staff on a tour of the Institute of High Energy Physics (IHEP) magnetic measurements facility in Beijing, PRC where all of the PEP II and SPEAR3 magnets were fabricated and measured. Left to Right: Li Li, Li Qing Zheng, Nanyang Li, Yun Yang, Rui Hou, Domenico Dell'Orco, Wan Chen, Ying Jie Li, Jack Tanabe, Richard Boyce.



In 2002, the Next Linear Collider Test Accelerator (NLCTA) achieved an acceleration gradient of 75 MV/m at X band. The NLCTA is a stand-alone linear accelerator that is part of SLAC's ongoing development of X-band accelerator and power-source technology. NLC staff pictured here with the Test Accelerator are (left to right) Doug McCormick, Frederic LePimpec, Josef Frisch and Tonee Smith.



SLAC staff celebrating Halloween 2001. Left to right: Star Corrales (Human Resources), Paul Stiles (Research Engineering), Perry Anthony (EFD), Gloria Labrador (Medical), Tineke Graafland (retired), Nina Stolar (Public Affairs), Michelle Smith (EFD), Carol Kubiak (Medical) and Wanda Elliott (EFD).

1997-2002



Arnold M. Massoletti, a long-time SLAC veteran, lifts the heating element from an Inconel retort filled with hydrogen at the SLAC Klystron Manufacturing braze shop in 2002. As the heater is lifted the retort cools, but when the heater was on the vessel both were heated to a white hot 1000 degrees centigrade. Inside this retort are klystron assemblies which are brazed using gold alloys to assure ultrahigh vacuum (UHV) integrity. These brazing operations go on everyday in two facilities on the site. One braze shop makes parts for the Klystron Department, the other makes assemblies for linac operations and construction.



By the mid-to-late 1990s, synchrotron radiation had enabled a revolutionary growth in macromolecular crystallography brought about, in part, by the development of new instrumentation and user-friendly integrated instrument control software. Shown above are SSRL scientists Aina Cohen and Tim McPhillips aligning the diffraction instrument on SSRL beam line 9-2. Using this beam line and others at SSRL, Professor Roger Kornberg and his collaborators from Stanford University completed a series of studies leading to a high resolution structure of RNA polymerase, the enzyme responsible for reading the genetic code and generating a message that tells cells what proteins to synthesize. This work was reported in a series of papers, one of which was published in the April 2001 issue of Science and featured RNA polymerase on the cover.



In early April 2002, the BaBar experiment's database stored its 500,000th Gigabyte - a milestone that makes it the largest known database in the world. Shown here with the data storage equipment are members of the SLAC-LBNL BaBar database team. Front row, left to right: Richard Mount (Assistant Director, Research Division), Adeyemi Adesanya, Artem Trunov. Back Row: Jacek Becla, Andrew Hanushevsky, Simon Patton and Adil Hasan.

Photo of the 2002 BaBar collaborators meeting at SLAC. The collaboration includes over 550 physicists and engineers from the USA, Canada, China (Beijing), France, Germany, Italy, Norway, Russia and the United Kingdom. There are currently 72 collaborating institutions.



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Georgia Row 95:2, 99:1

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