

PUB-3123

Advanced
Light Source

Users' Handbook

July 1995

Revision 1

Lawrence Berkeley National Laboratory
University of California
Berkeley, CA 94720

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Other links from the ALS HomePage offer current machine status, weekly and long-term operations schedules, beamline information, how to become an ALS user, and more.

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Design: Greg Vierra

The ALS values your suggestions. Please send any comments about this publication to Jane Cross at jccross@lbl.gov.

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**Advanced
Light Source**

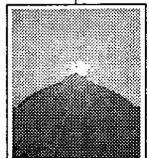
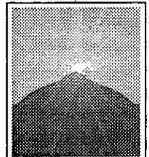
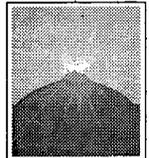
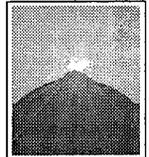
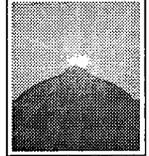
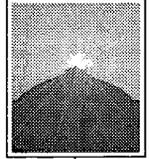
Users' Handbook

July 1995

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Lawrence Berkeley National Laboratory
University of California
Berkeley, CA 94720

Prepared for the U.S. Department of Energy under Contract DE-AC03-76SF00098



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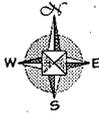
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About This Handbook

The ALS Users' Handbook is designed to help you prepare for your visit to the ALS, to assist you in getting your experiments underway, and to act as a resource to the facilities and services available at the ALS and LBNL. We hope it encompasses "what you need to know" to make your stay at the ALS productive and enjoyable.

Contents

The handbook contains six sections. Sections 1 and 2 explain how to become a user of the ALS and contain important information users need to know before arriving at the ALS. All ALS users are encouraged to read this part of the handbook well in advance of their planned visit to the ALS.

Sections 3 and 4 describe general information about organizational structure and access to the ALS, and describe the facilities and services offered at the ALS and LBNL. Section 5 lists some fun things to see and do in the Berkeley area including museums, parks, and sports facilities. Section 6 contains reference information.

Section	Topic
1 Getting Started	Tells how to plan for your visit at the ALS and what to do upon arrival.
2 Getting Around	Explains how to get to LBNL and the ALS.
3 General Information	Gives general information on the ALS.
4 Facilities and Services	Describes facilities and services available to users.
5 Nearby Diversions	Lists nearby cultural and recreational opportunities.
6 Reference	Contains reference materials.

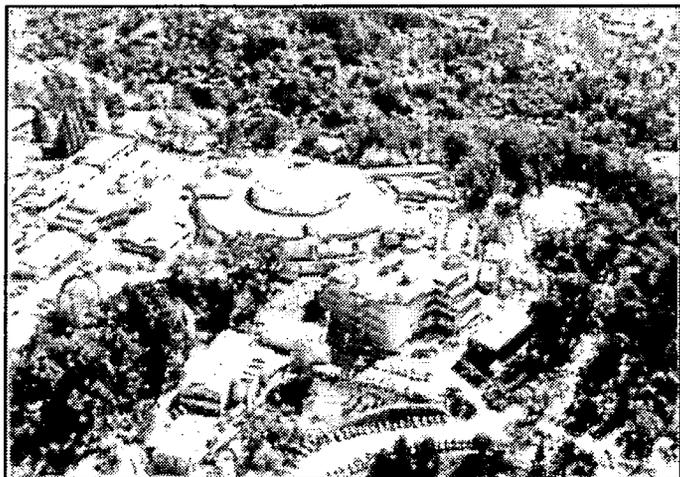
Note: The ALS User Office and Administration Offices relocated from Building 80 to Building 4 in May 1995 to allow construction of the ALS Structural Biology Support Facilities on the second floor of Building 80. Phone numbers and mailstops for ALS staff were not affected. The inside back cover of this handbook lists phone numbers and pager numbers for ALS personnel that users need to contact most frequently.

Introduction

The Advanced Light Source (ALS) is a national facility for scientific research and development located at the Lawrence Berkeley National Laboratory (LBNL) of the University of California. Its purpose is to generate beams of very bright light in the ultraviolet and soft x-ray regions of the spectrum. The facility is open to researchers from industry, universities, and government laboratories.

The ALS is situated in the hills of Berkeley, California, overlooking the San Francisco Bay. A third-generation synchrotron-radiation source (specifically designed to make optimum use of insertion devices), the ALS provides opportunities for research in many different fields such as materials science, atomic and molecular physics, chemistry, biology and medicine, earth and environmental sciences, manufacturing technology, and analytical services. Qualified users have access either as members of participating research teams (PRTs) or as independent investigators.

The ALS building incorporates the dome that once covered the 184-Inch Cyclotron built by Lawrence Berkeley National Laboratory's founder E.O. Lawrence.



The ALS consists of an electron source, a linear accelerator, a booster synchrotron, and a low-emittance storage ring.

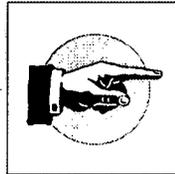
The 200-meter-circumference storage ring has 12 long straight sections, 10 of which are designed to accommodate insertion devices called undulators and wigglers which generate synchrotron radiation with enhanced characteristics. The facility is capable of accommodating approximately 46 beamlines and more than 100 experiment endstations.

Continued on page viii

Introduction, continued

The ALS storage ring is optimized to run at an energy of 1.5 GeV, although it can run from 1.0 to 1.9 GeV, allowing flexibility for user operations. The normal maximum operating current is 400 mA in multi-bunch operation with a lifetime of approximately 12 hours; other filling patterns are available upon request. The spectral range of undulator and wiggler beamlines extends from photon energies of roughly 5 eV to 10 keV. Bend magnets produce radiation from the infrared to about 12 keV.

Getting Started





Becoming A User

User Modes

The ALS, a Department of Energy national user facility, is available to researchers from industry, universities, and government laboratories without charge. Proprietary work can be done on a full cost recovery basis; the researcher has the option to retain title to inventions resulting from proprietary research (see "Proprietary/Non-Proprietary Research," page 3, for further details).

There are two modes of conducting research at the ALS: to work as a member of a participating research team (PRT), or to work as an independent investigator.

Participating Research Teams (PRTs)

PRTs (collaborative groups of people from industry, universities, and/or government laboratories) construct and operate beamlines and experiment chambers at the ALS. This hardware is quasi-permanent in nature, but the experiment program may change with time. PRTs are entitled to a certain percentage of their beamline's operating time according to the resources contributed by the PRT. Independent investigators are granted the remaining operating time.

Written proposals to establish new PRTs should be directed to Neville Smith, Scientific Program Head, in care of the ALS User Administrator at the address listed on page 3. Proposals will be considered by the Program Advisory Committee, which meets twice a year.

Independent Investigators

Scientists interested in conducting experiments at the ALS as independent investigators submit proposals to the ALS User Administrator or Scientific Program Head; see "Proposal Path" for information on proposal evaluation. Independent-Investigator proposals may involve bringing experiment chambers to the ALS from other locations, or they may involve the use of chambers provided by the ALS facility or by a PRT. Independent investigators may also establish collaborations with PRT members.



Becoming A User, continued

Proprietary/Non-Proprietary Research

Non-proprietary research The ALS is a Department of Energy national user facility, and as such does not charge users for beam access if their research is non-proprietary. For research to be considered non-proprietary, the research results must be published in the open literature. All users are responsible for the day-to-day costs of research (e.g., supplies, phone calls, technical support).

Proprietary research Proprietary research can also be performed at the ALS. Users performing proprietary research will be charged a fee based on cost recovery for ALS usage. In return, the user may choose to take title to any inventions made during the proprietary research program and treat as proprietary all technical data generated during the program. Contact the ALS User Administrator at (510) 486-6166 for information on proprietary research proposals.

Proposal Path The ALS accepts two types of proposals for beam use: Independent Investigator proposals and Participating Research Team (PRT) proposals. Guidelines for all proposals can be obtained from:

ALS User Administrator
Advanced Light Source
Lawrence Berkeley National Laboratory
MS 80-101
Berkeley, CA 94720
Tel: (510) 486-6166
Fax: (510) 486-4960
Email: alsuser@lbl.gov

Continued on page 4



Becoming A User, continued

Review process for Independent-Investigator proposals

Independent researchers may propose experimental programs or single experiments to be performed on existing beamlines. The review process, summarized in the flowchart on page 6, consists of the following steps:

1. ALS personnel review the proposals for technical feasibility, safety, and personnel resources, and PRT beamline personnel check them for conformance to the beamline's capabilities. If a particular beamline is specified in the proposal, it is strongly recommended that the independent investigator contact the appropriate PRT spokesperson before submitting the proposal.
2. Proposals undergo peer review by a Proposal Study Panel, which rates the proposals and makes recommendations on the requisite beamtime.
3. Highly rated proposals are allocated beamtime by the Scientific Program Head in consultation with the spokesperson of the host PRT.

Independent-Investigator proposals for beam use are reviewed twice a year. The deadlines for submissions are June 1, for beamtime between October and March, and December 1, for beamtime between April and September. Independent investigators may also establish collaborations with PRT members; they should contact the appropriate PRT spokesperson directly to learn whether such a collaboration is feasible.

Experiment Review Process

Every experiment conducted at the ALS has two important documents associated with it that are generated before the experiment begins: an Experiment Form filled out by the Experimenter in Charge of the proposed experiment, and an Experiment Summary Sheet, created by the ALS on the basis of a review of the user's Experiment Form. These forms are explained below; their use is summarized in the flowchart on page 6.



The Experiment Form requests information about all potentially hazardous materials the experimenters plan to bring. The ALS reviews the form to identify any problems or safety issues that need to be resolved and creates an Experiment Summary Sheet (ESS) summarizing the safety requirements and considerations associated with the experiment. The ALS also provides instructions to the user detailing the handling of all hazardous materials; the user then arranges for the transport of all hazardous materials to the ALS. The ESS must be signed and posted at the beamline before the experiment can begin, and it must be renewed every six months. Before signing the ESS, the ALS verifies that users have completed the required safety training and that the equipment meets all safety standards.

It is important to prepare and submit the Experiment Form at least one month before the scheduled start of an experiment and to list all potentially hazardous materials and equipment. Not doing so can lead to unnecessary delays while safety issues are resolved or new activity-hazard documents are prepared and approved.

Modifying an experiment

Once the experiment has begun, any modification requires the Experimenter in Charge to submit an Experiment Modification Form. This form must be approved before the start of the modified experiment.

Extending experiment time

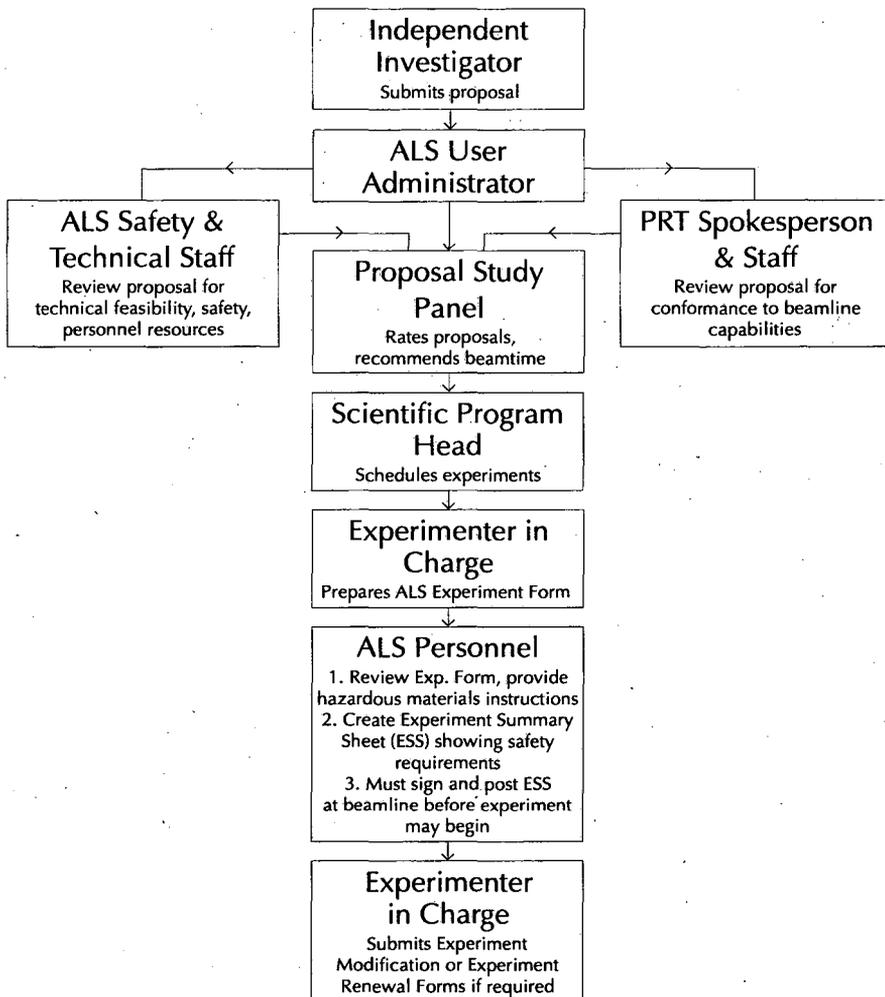
An Experimenter in Charge who wishes to extend the approved time for an experiment must submit an Experiment Renewal Form to the ALS User Administrator. This form must be approved before the experiment can be performed during the renewal period.

For more information on the experiment review process, contact the ALS User Liaison, Fred Schlachter, at (510) 486-4892.



Becoming A User, continued

Experiment Proposal and Review Path for Independent Investigators





User Agreement

Before Independent Investigators or members of PRTs can begin their research at the ALS, LBNL and the user's sponsoring institution must have signed a User Agreement which is generated by LBNL's Contracts and Licensing Office. The document is an umbrella agreement that can cover all ALS experiments and all users from a given institution for up to a five-year period. It covers issues such as intellectual property rights, liability, safety and health, and payment of expenses.

When an experiment proposal is accepted, the ALS checks to see if such an agreement exists between LBNL and the user's sponsoring institution. If not, ALS Administration notifies the Contracts and Licensing Office to initiate an agreement with the institution. Users should allow 2-3 weeks for their institution and LBNL to complete the necessary paperwork. For questions concerning the contents or status of an agreement, contact Marie Bowman, LBNL Contracts and Licensing Office, at (510) 486-5214, fax: (510) 486-4386.



Before You Come

Pre-Registration

Before you begin work at the ALS, you must register with the LBNL Reception Center and receive appropriate safety training. The registration process and safety orientation takes about two hours for U.S. citizens and up to four hours for non-U.S. citizens. To make the most efficient use of your time once you arrive, the ALS recommends that you complete much of the necessary paperwork in advance.

At least one month before your scheduled arrival date (six weeks for non-U.S. citizens):

Contact ALS Administration for registration forms.

At least three weeks before your arrival date:

Send your completed registration forms to ALS Administration.

Non-U.S. citizens, please contact the Reception Center to schedule an appointment with the LBNL Foreign Guest Coordinator for the day before you plan to start work on the experiment floor.

Contact information

Elizabeth Saucier, ALS User Administrator
Lawrence Berkeley National Laboratory
MS 80-101
Berkeley, CA 94720
Tel: (510) 486-6166
Fax: (510) 486-4960
Email: alsuser@lbl.gov

Nancy Lau, Foreign Guest Coordinator
Lawrence Berkeley National Laboratory
Reception Center, MS 65
Berkeley, CA 94720
Tel: (510) 486-4008
Fax: (510) 486-6169
Email: nolau@lbl.gov



Before You Come, continued

Checklist of Documentation/Activities Related to Using the ALS*

4 Weeks Before Arrival (6 weeks for non-U.S. citizens)

Contact ALS Administration for registration forms

2-3 Weeks Before Arrival (4 weeks for non-U.S. citizens)

Return the 4 Registration Forms below to ALS Administration

Participating Guest Form

Medical Form

Patent Agreement

Radiation Worker Form

Read ALS Users' Handbook

Upon Arrival

Bring proof of medical insurance

Complete required safety training

Read ALS Safety Handbook**

Read User Advisories**

Upon Departure

Submit User Services Questionnaire and End-of-Run Summary

Return radiation badge and keys

**Activities Related to Conducting Experiment
For Experimenter-in-Charge Only**

Experiment Form — Submit to ALS User Administration at least one month before scheduled beamtime.

Experiment Summary Sheet — Prepared by ALS. Must be approved and posted at beamline before start of experiment.

Experiment Modification Form — Submit to Beamline Operations Section Leader if experiment is to be modified. Must be approved and posted at beamline before start of modified experiment.

Experiment Renewal Form — Submit to ALS User Administrator to renew Experiment Summary Sheet.

* Please see page 62 for a description of forms.

** Please see "Other Sources of Information," page 65, for more information on User Advisories and the ALS Safety Handbook.



Before You Come, continued

Shipping Materials to the ALS

Receiving shipments at LBNL

Please contact Beamline Operation Section Leader Ray Thatcher [(510) 486-7412 or ext. 7412] about any shipments that will arrive before or during your stay, and advise him of any special handling instructions. This is especially important for hazardous materials, where storage and shipment may require advance planning. Plan to ship all items back to your home institution when your experiment is complete. For complete information on shipping and receiving items to and from the ALS, see "Shipping" on page 48.

Hazardous materials

- Ship the smallest quantity necessary for your experiment. Use of hazardous materials on the experiment floor is limited to small quantities.
- Hazardous materials shipped to or from LBNL must be packaged and handled according to U.S. Department of Transportation guidelines, and each shipment must include pertinent Materials Safety Data Sheets (MSDSs).
- **Transportation of hazardous materials by private vehicle or LBNL vehicles is prohibited.**
- Contact Ray Thatcher for details on hazardous materials shipments [(510) 486-7412 or ext. 7412].
- For other information about hazardous materials, contact ALS EH&S Program Manager Georgeanna Perdue [(510) 486-7407 or ext. 7407].



User Accounts

LBNL tracks payments for supplies, services, telephones, etc., through a system of accounts, against which charges are made. When your experiment is accepted, the LBNL Contracts and Licensing Office sets up an account for your use, and the person responsible for the account specifies which individuals are authorized to sign on the account.

For information about accounts or authorization, contact Judy Zelter [(510) 486-7225 or ext. 7225]. See "User Account Statements" on page 40 for information on tracking expenses.

Lodging

Hotels Several local hotels offer a discount to LBNL visitors, and many of these hotels are accessible by public transportation and/or the LBNL shuttle. For a list of hotels or more information, contact the LBNL Reception Center [(510) 486-6198, fax (510) 486-6169].

Rentals LBNL has listings of short- and long-term rentals (rooms, apartments, and houses). To access them, use one of the following methods:

- Call the Reception Center Administrator, Ruth Pepe [(510) 486-6198 or ext. 6198] for information.
- Check listings in *Currents* (LBNL's weekly newspaper, delivered to LBNL mailstops each Friday).
- If you have a Macintosh computer on the LBNL network and Claris Filemaker Pro, use the Chooser: AppleShare/entry zone/Reception Server (guest)/RC File Server/Housing/RC Rental Listing.

Climate

The ocean and bay keep Berkeley's temperature moderate, but night and morning fog are common all year. The climate ranges from cool and damp to warm and sunny, often within the same day. There is virtually no rainfall from May through October.



When You Arrive

Registration When you first arrive at LBNL, you will need to register at the LBNL Reception Center in Building 65. The registration process and safety training will take approximately two hours (up to four hours for non-U.S. citizens). If you have not submitted your registration forms in advance, the process will take longer.

Please arrive at the Reception Center between 8:00 and 10:30 A.M. or between 1:00 and 2:30 P.M.

U.S. citizens do not need an appointment; non-U.S. citizens must have an appointment for the day before they plan to start work on the experiment floor. See "Before You Come," page 8, for information.

At the Reception Center, you will:

- Complete any registration forms that were not submitted in advance.
- Take the safety training required by the ALS to obtain a radiation monitoring badge and conduct your experiment. Persons entering the ALS experiment floor must either wear a radiation monitoring badge at all times or be under the continual supervision of a person wearing a badge. Please see "Visitor Access to the ALS Experiment Floor," page 30, for more information.
- Receive an LBNL identification card and parking information.



Safety Training

All first-time ALS users are required to complete the following safety training before getting a radiation monitoring badge (required for unrestricted access to Building 6, the ALS experiment floor). The training is given when you register at the Reception Center (see "Registration," page 12).

- Hazards Alert (18-minute video)
- Personal Radiation Monitoring (15-minute video)
- Safety at the ALS (20-minute video)
- ALS Safety Handbook

Additional training may be required in the use of chemicals, machine tools, lasers, etc., depending on the experiment and the user's needs.

Parking

Parking regulations

You must have a parking permit to park at LBNL. Signs in each parking lot designate the type of permit required for that area. Cars parked in no-parking areas or without appropriate permits may be cited or towed.

Obtaining a permit

Users, except for students, are granted parking permits on request during the first-day registration process. Student permit requests are evaluated on a case-by-case basis. For more information, contact the ALS User Administrator (ext. 6166).

Users without a parking permit who need to drive to the ALS during weekends (because there is no LBNL shuttle bus service) can obtain a same-day parking pass by presenting their LBNL identification card to the security guard at the main entrance.

Availability of parking spaces

Finding a parking space at LBNL can be very difficult. The ALS has a few parking spaces, but these are not generally reserved for individuals. Users are strongly encouraged to use the LBNL shuttles whenever possible (see "To LBNL from Downtown Berkeley," page 22).



When You Arrive, continued

Computer Network Access

All network connections at the ALS are provided through ALSnet, a local area network (LAN) which is connected to LBNLnet and to the Internet. The ALS provides support for IBM compatible, Apple, and Sun systems. If you are using a different system, or have any specialized computer requirements, contact the ALS Network Contact before your arrival at the ALS.

ALS Network Contact Paul Molinari (ext. 4953, p_molinari@lbl.gov).

Connecting to ALSnet For all ALSnet connections, call the ALS Network Contact. If he is unavailable, call the LBNLnet Operation Staff (ext. 4559). You may not make any connections or alterations to network hardware or software without first discussing such actions with the ALS Network Contact.

Cost of connections Connecting to an existing user area subnet (i.e., making only "soft" changes, such as assigning IP numbers) is free. If new hardware is needed or new lines must be run for the connection, there is a one-time charge that is generally less than \$500 (exact prices depend on media type and user equipment).

Local area networks (LANs) supported

- Ethernet (IEEE 802.3) LANs are supported for controls, beamlines, and user areas such as offices.
- LocalTalk/PhoneNet LANs are available by special request. Call ALS Network Contact for more information.
- Token Ring (IEEE 802.5) LANs are not supported.

Protocols supported

- AppleTalk Phase 2 (for Macintosh connectivity)
- DECnet Phase 4 & 5
- Novell Netware IPX (for IBM PC connectivity)
- OSI CLNP (GOSIP)
- TCP/IP

When You Arrive, continued



*Suspected problems with ALSnet
or LBNLnet*

Call LBNLnet Network Operation Staff (ext. 4559).

Hardware problems

For LBNL-owned computers, call LBNL Computer Systems Maintenance (ext. 7554) and be prepared to give an account number. User-owned computers must be serviced privately.

LBNL computer support

For this service, be prepared to give an account number. LBNL Mac and PC Support Group Ext. 6858

Computer Security

Data security

Virus protection is critical for the safety of users' data and to protect other users of ALSnet. Current versions of virus protection software are available from the ALS Network Contact (ext. 4953).

If you discover a rogue program, such as a virus or worm, or if there is a network security violation, notify the ALS Network Contact (ext. 4953).

Hardware security

The safety of user-owned computer hardware is the responsibility of the user. For help obtaining and installing locks, seismic protection, and other security devices, contact the LBNL Electronics Technology Department (ext. 5562).

Key Policy

Each user will be issued a key to Building 6 (the ALS experiment floor) by Ray Thatcher (ext. 7412) when they have completed the safety training required to get a radiation monitoring badge (required for unrestricted access to Building 6, see "Safety Training," page 13). This key also allows access to the shipping/receiving area in Building 7.

User Offices

Offices are allotted on a space-available basis by the ALS User Administrator (ext. 6166).



When You Leave

Equipment and Hazardous Materials

When your experiment is complete or when you leave it for extended periods, secure all potentially hazardous items or systems.

User equipment

Arrange for return transportation of user equipment. For assistance, contact Ray Thatcher (ext. 7412).

ALS equipment

Notify Ray Thatcher (ext. 7412) of any ALS equipment that can be returned to storage.

Keys and Badge

Return your keys and your radiation monitoring badge to the ALS User Office in Building 4.

User Services Questionnaire and End-of-Run Summary

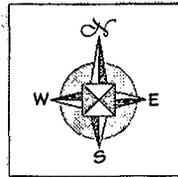
Complete a User Services Questionnaire and End-of-Run Summary form and return it to the ALS User Office or an Operations Coordinator.

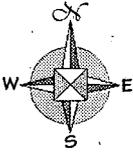
Research Papers

Send a copy of all papers resulting from your research at the ALS to:

ALS User Administrator
Advanced Light Source
Lawrence Berkeley National Laboratory
MS 80-101
Berkeley, CA 94720

Getting Around





Getting Around

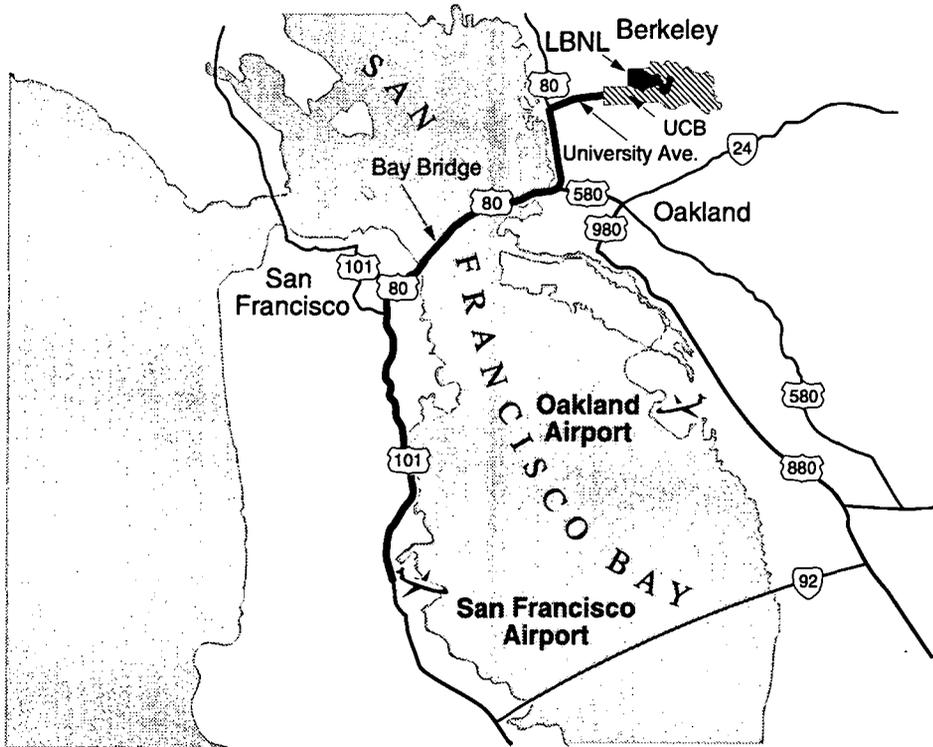
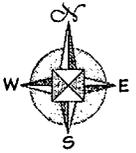
To LBNL from San Francisco Airport

- By Car*
1. Take U.S. Highway 101 North in the direction of San Francisco, then follow the signs to Interstate 80-Bay Bridge.
 2. After you have crossed the bridge, follow Interstate 80/580 West-Berkeley/Sacramento to the University Avenue exit.
 3. See "To LBNL from Downtown Berkeley," page 22, for directions to LBNL/ALS.

By Shuttle Bayporter Express — \$16 [(415) 467-1800]
Reservations recommended one day in advance.

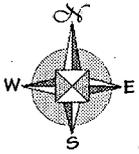
By Taxi About \$50 (approximately 1 hour ride)

Getting Around, continued



10 miles
10 kilometers





Getting Around, continued

To LBNL from Oakland Airport

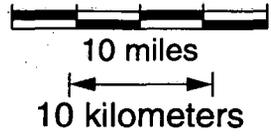
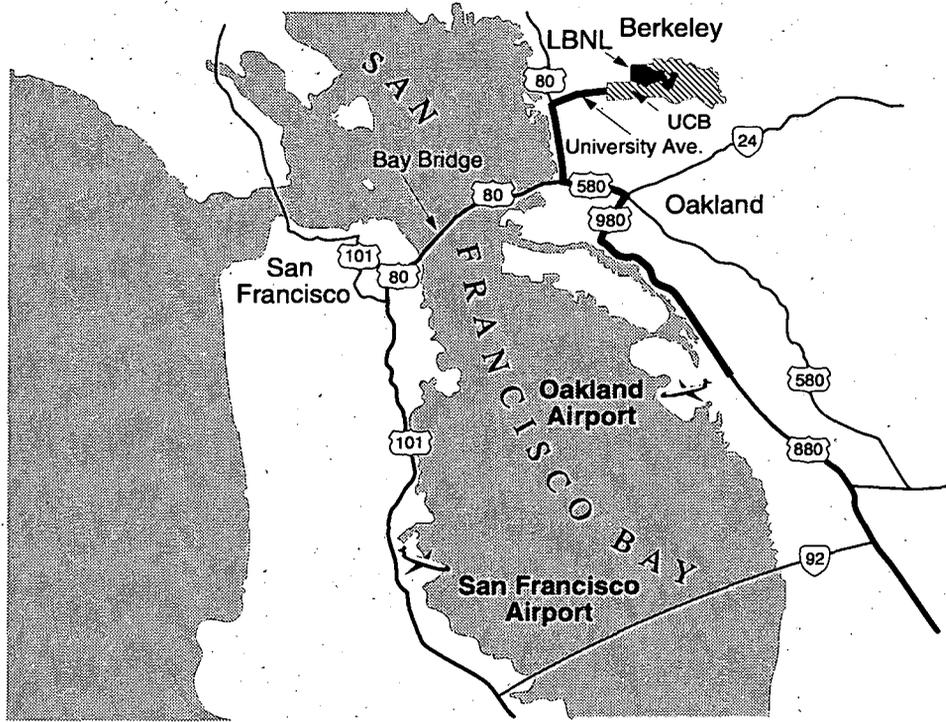
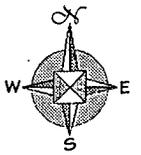
- By Car*
1. Take Interstate 880 North in the direction of Oakland/San Francisco.
 2. Follow signs to Interstate 980, (at this point, do not follow signs to Berkeley/Walnut Creek Highway 24), then take MacArthur Freeway Interstate 580 West-San Francisco, to Interstate 80 East-Berkeley/Sacramento.
 3. Take Interstate 80 East to University Avenue exit.
 4. See "To LBNL from Downtown Berkeley," page 22, for directions to LBNL/ALS.

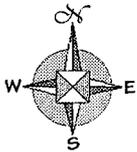
- By BART (Bay Area Rapid Transit)*
1. Take Air-BART shuttle from either terminal to Coliseum BART Station (departs every 15 minutes) — \$2
 2. Take Richmond BART train to Berkeley Station (departs every 15–20 minutes) — \$1.30
Travel time — approximately 40 minutes
 3. Board LBNL off-site shuttle at Berkeley BART station — see "To LBNL from Downtown Berkeley," page 22, for directions.

By Shuttle Bayporter Express — \$16 [(415) 467-1800]
Reservations recommended one day in advance.

By Taxi About \$25 (approximately 30-minute ride)

Getting Around, continued





Getting Around, continued

To LBNL from Downtown Berkeley

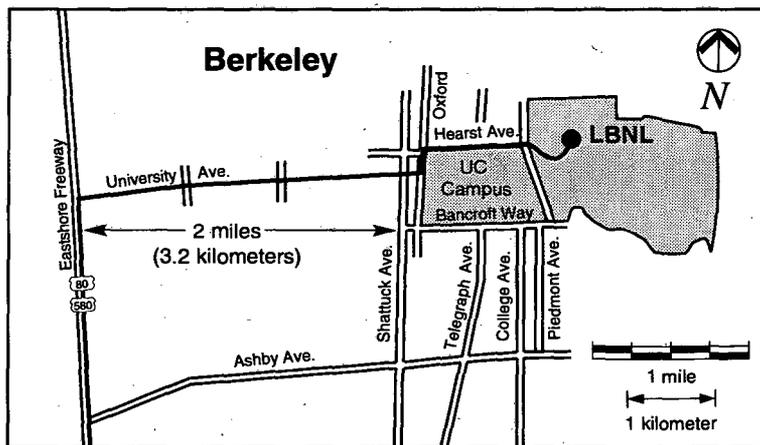
By Car

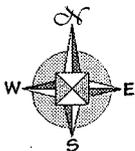
1. Take University Avenue (east) to Oxford Avenue.
2. Turn left on Oxford Avenue.
3. Turn right on Hearst Avenue.
4. Continue uphill on Hearst Avenue to LBNL main gate.

By LBNL Shuttle

An LBNL shuttle runs between the LBNL Reception Center (Building 65), the Berkeley BART station, and the UC Berkeley campus (see map on facing page). The BART stop is at the corner of Shattuck Avenue and Center Street, across from the Berkeley BART "plaza" entrance and next to Wells Fargo Bank. LBNL shuttle stops are shared with AC transit buses, so LBNL riders should stand on the white LBNL logo painted on the sidewalk and wave to the driver as the LBNL shuttle approaches.

Shuttles run from LBNL's Building 65 every 10 minutes from 6:30 A.M. to 5:50 P.M., every 20 minutes from 5:50 P.M. to 6:50 P.M., and on the hour at 8:00 P.M. and 9:00 P.M.





Getting Around, continued

To ALS from LBNL Reception Center

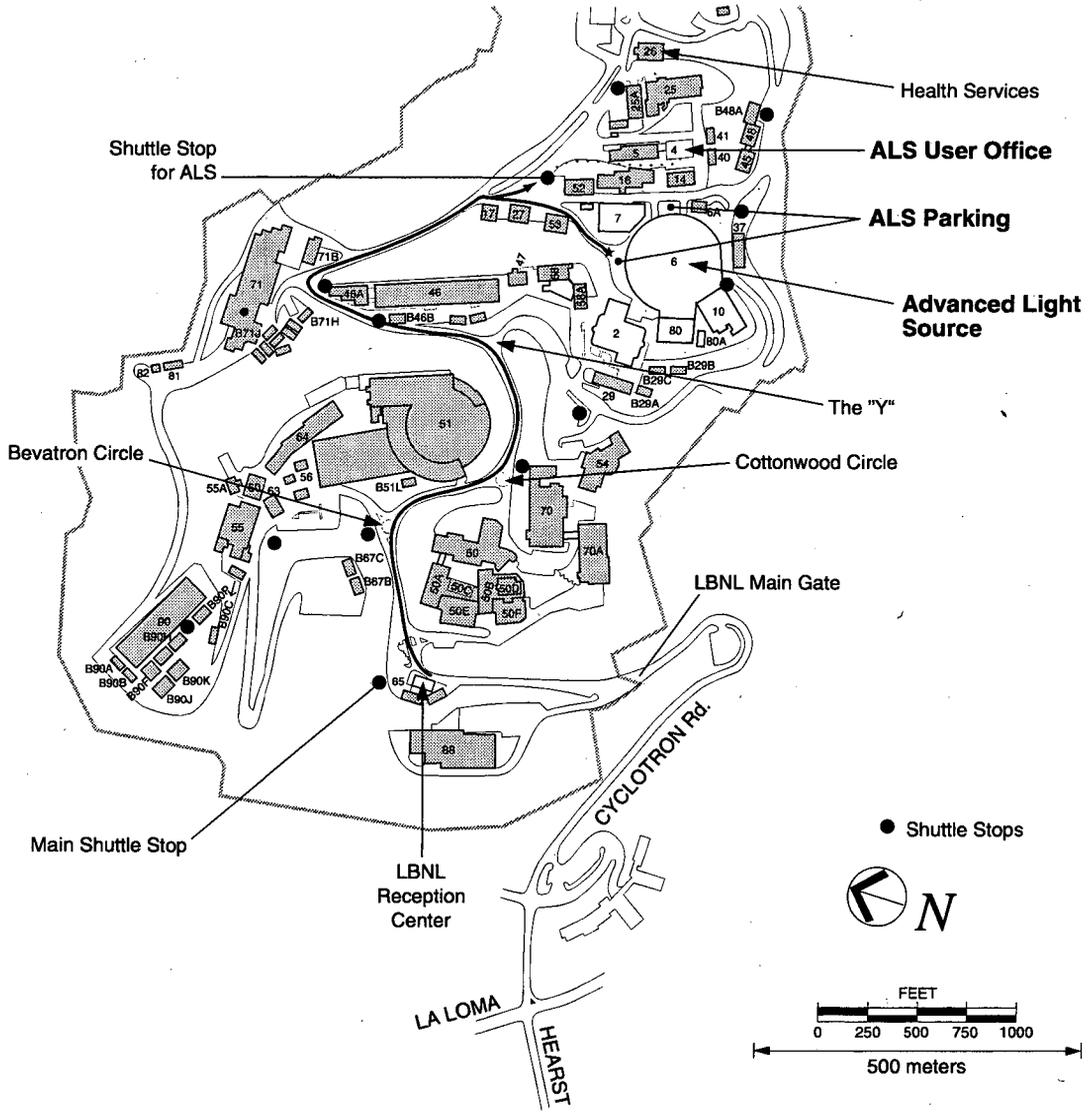
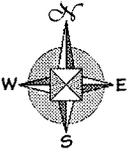
It is difficult to find one's way around LBNL, and the parking spaces are usually full by 9:00 A.M. The first time you come, please take the LBNL off-site shuttle from the UC Berkeley campus or the Berkeley BART station to the LBNL Reception Center (Building 65; see "To LBNL from downtown Berkeley," page 22). After completing your registration and safety training, go to the shuttle stop next to Building 65, catch an on-site shuttle with a blue flag on the front, and ask the driver to take you to the ALS User Office in Building 4, or the ALS in Building 6. This will save you time until you know the area better.

1. Enter main gate on Cyclotron Road. The LBNL Reception Center (Building 65) is the green building ahead and on the left.
2. Continue uphill and bear right at Bevatron Circle.
3. Continue uphill, bearing left past Cottonwood Circle.
4. Turn left at yellow "Thru Traffic" sign ("The Y").
5. Continue uphill and turn right at yellow "Thru Traffic" sign.
6. One block uphill, turn right at "Advanced Light Source" sign.
7. Drive in about 30 meters (30 yards). You will be in a parking lot and may park here if there is a space available.

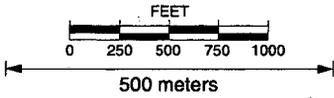
*To reach the ALS (Building 6) by
car*

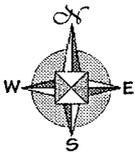
In the parking lot, the road divides (see map on page 26). The left fork continues uphill and has a double yellow line. The right fork divides into two routes. Look for the "ALS Parking" sign between these two routes. The ALS building is visible down the right-hand route. It is lavender; the roof is a brown dome topped by a green cupola. If you drive down the right-hand route, some parking may be available.

Getting Around, continued

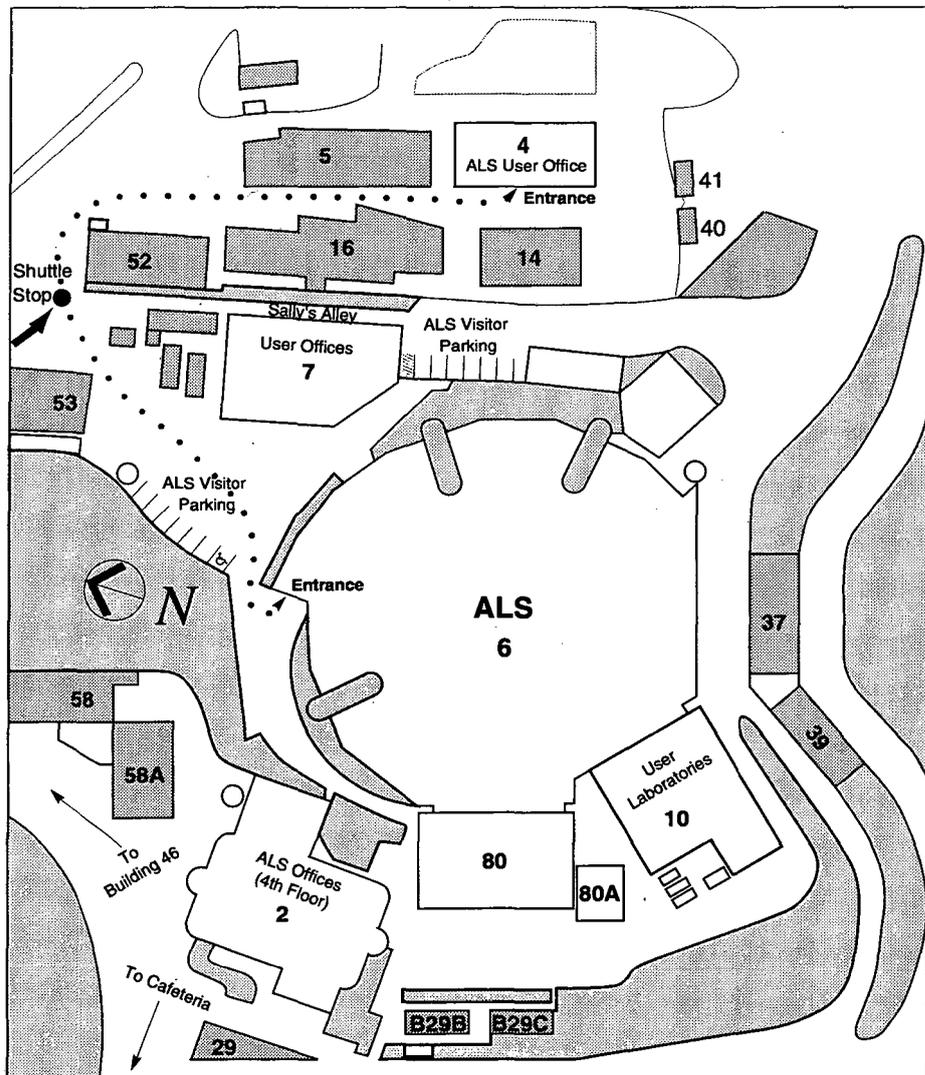


● Shuttle Stops



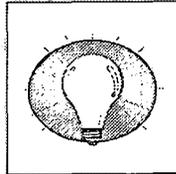


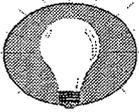
Getting Around, continued



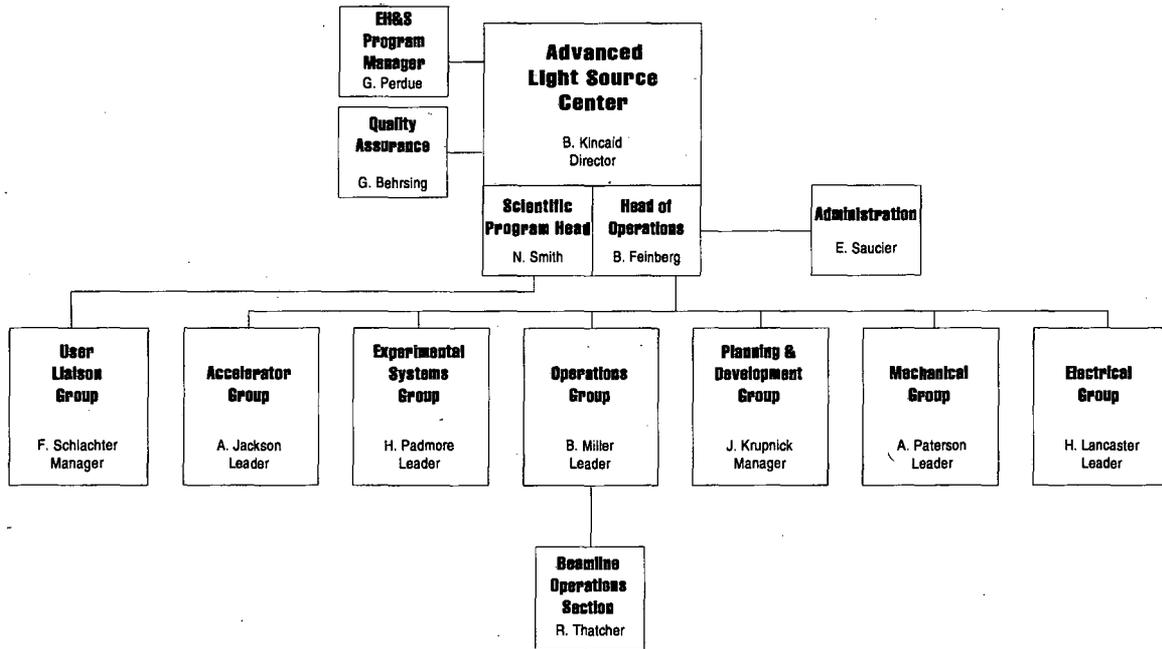
The ALS Experiment Floor, Building 6, is a controlled access area. All visitors must have an LBNL radiation badge or be escorted by an ALS staff member. Call the ALS User Office [(510) 486-7745 or ext. 7745] to arrange for access to Building 6.

General Information



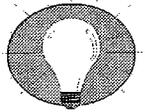


General Information



ALS Organization Information

A staff of about 150 supports the ALS facility and provides service to users. The Advanced Light Source Center Director, Brian Kincaid, is responsible for the development and operation of the ALS as a national user facility. The Scientific Program Head, Neville Smith, directs the scientific program and oversees the proposal review process. The Head of Operations, Ben Feinberg, is responsible for day-to-day operations of the ALS, including machine operations. The User Liaison, Fred Schlachter, handles user issues. The Beamline Operations Section Leader, Ray Thatcher, helps users with most practical issues involving beamlines and experiments. The User Administrator, Elizabeth Saucier, supervises the logistics involved with the registration process, the experiment review process, and the proposal process.

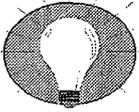


ALS Users' Association

The Advanced Light Source Users' Association (ALSUA) is the body of present and potential users of the ALS, and other persons who are interested in the aims of the ALS. The purpose of the ALSUA is to provide a framework for the interaction between those who use the ALS for their research and the ALS management, and to provide a channel for communication with other synchrotron radiation laboratories and with federal agencies. The ALSUA is a means for users to express to ALS management their needs and desires regarding operating policy, use of the ALS, user support, and other issues. The ALSUA also provides a means for the ALS management to inform users about current and future plans for the facility.

Users' Executive Committee

The Users' Executive Committee (UEC) is elected by the members of the ALSUA to act as the official voice of the user community in its interactions with ALS management. The UEC consists of a Chairperson, a Vice Chairperson, the Past Chairperson, the Secretary, and seven additional members.



General Information, continued

User Access to the ALS Experiment Floor

To gain unrestricted access to Building 6 (the ALS experiment floor), each user must complete radiation safety training and have his/her own radiation monitoring badge. The training is part of the registration process at the LBNL Reception Center (see "Registration," page 12).

Individuals in the ALS experiment floor area without their own radiation monitoring badges are required to wear an "ALS Escorted Visitor" badge, have registered in the "Visitors Log," and be under the continuous supervision of someone who is wearing a radiation monitoring badge.

Visitor Access to the ALS Experiment Floor

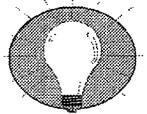
Who is considered a visitor

Persons age 18 or over who do not have their own radiation monitoring badges are considered visitors. This includes unbadged LBNL employees, contractors, and friends or relatives of users and LBNL staff members, as well as other outside visitors.

Registering visitors

Visitors to Building 6 must be escorted by a badged, trained LBNL employee or participating guest who is knowledgeable about the ALS [training involves reading the "ALS Controlled Area Visitor Sign-In" procedure #HP 02-01; contact the ALS User Office (ext. 7745), the ALS Procedure Center in Building 80A (ext. 7723), or a trained ALS staff member to receive the training]. The escort and each visitor must register in the "Controlled Access Visitors Log" and each visitor must wear an "ALS Escorted Visitor" badge visibly throughout the visit. The registration process differs according to the time of the visit:

Monday through Friday, during normal business hours, ALS visitors register in the "Controlled Access Visitors Log" and obtain their badges in Building 2, Room 400B.



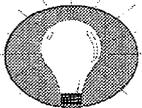
General Information, continued

On weekends and during off-hours, the "Controlled Access Visitors Log" and visitor badges are available in the Control Room in Building 80, Room 140. Prior to entering the ALS experiment floor controlled area, the escort should check the video monitors in the lobby of Building 6 to determine if visitors are allowed into the building. If they are not, the monitors will read "Escorted visitors are not permitted in Building 6," and will indicate a time when visits may resume.

Escorting visitors Before entering the controlled area, the escort must inform visitors of the definition of a controlled area, the importance of adherence to signs and postings, and the location of emergency exits. This information is also available on the "Visitor Information Sheet," copies of which are available in the back of the "Controlled Access Visitors Log."

While inside the controlled area, the escort must keep visitors in view at all times and prevent them from entering radiation or high radiation areas.

Children Children under 18 are not allowed in controlled areas of the ALS while any component is operating or preparing to operate with an electron beam, except as part of a general tour arranged through the LBNL Community Relations Office (ext. 5122). When the accelerator is not operating, children may be escorted in Building 6 as any other visitor.



General Information, continued

Storage Ring Status

Up-to-date information about beam current, lifetime, and machine status is displayed on overhead monitors in the Building 6 lobby and on the ALS experiment floor.

The present storage ring current is also available on the World Wide Web. To reach the Operations Group HomePage from NCSA's Mosaic browser, choose "Open URL" from the File menu and type:

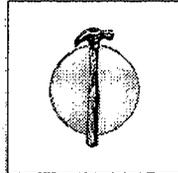
http://beanie.lbl.gov:8001/als/als_ops/ops_home.html

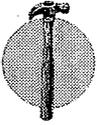
Operating Schedule

The ALS operating schedule for each week is posted on the bulletin board inside the lobby entrance to the ALS experiment floor, and in the User Services area in Building 6. The same weekly schedule, along with longer-range operations schedules, is available on the World Wide Web. See the instructions under "Storage ring status" to reach the Operations Group HomePage.

The Operations Group Leader holds meetings with users on a regular basis to schedule storage ring operations, including operating current, single-bunch versus multi-bunch operations, etc. Meetings are usually held on Fridays at 3:30 P.M. in the Building 6 conference room; contact the Operations Group Leader, Bob Miller (ext. 4738), for the time of the next meeting.

Facilities and Services





Experiment Support

Clean Assembly Room

Building 10, Room 106 is a Clean Assembly Room available to ALS users. A limited number of large (2 meter/6 feet tall) storage cabinets are available in this room for short-term storage.

For access or information, contact the Beamline Operations Section Leader, Ray Thatcher (ext. 7412).

Laboratories

Chemistry laboratory Building 10, Room 102
This laboratory has a fume hood for acids, an ultrasonic cleaner for cleaning UHV parts, and a small area for storing liquids.

Liquid storage room Building 10, Room 104

Gas storage room Building 10, Room 100

For more information or for laboratory access, contact Ray Thatcher (ext. 7412).

Machine Shop

Location Building 10, Room 111

Phone Ext. 7065

Hours 7 A.M.–4 P.M., Monday–Friday

Qualification to use the Machine Shop

Users must complete a 15–30 minute safety orientation before using the machines. To arrange an orientation, call Wayne Oglesby (ext. 5142) during shop hours.

Using the Machine Shop

Qualified users may use the machine shop on a walk-in basis during its regular hours. During off hours, check with an Operations Coordinator (ext. 7464) or the Control Room (Building 80, Room 140) to get access. At least two people must be in the machine shop when equipment is being used; during off hours, users are responsible for bringing along a second person for safety.

Experiment Support, continued

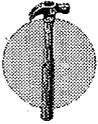


Storage Storage at the ALS is very limited. Please bring the smallest amounts possible of necessary materials.

Liquid and gas storage Facilities for liquid and gas storage are listed under "Laboratories," page 34.

ALS experiment floor Storage of items not in use, including shipping cartons, on the ALS experiment floor in Building 6 is not permitted. User offices may be used for storage within safe limits.

Additional storage There is some additional storage space for materials and equipment on the first floor of Building 7. Contact Ray Thatcher (ext. 7412) for information.



Experiment Support, continued

Supplies Supplies are available through the avenues listed below. Where and how fast you can get an item depends on what it is.

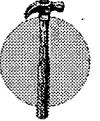
Most supplies are obtained from LBNL Stores which is divided among a number of buildings with each location having a slightly different process for handling orders. A small "emergency" supply of UHV equipment and electronic parts are available at the ALS. An account number is required for all orders.

The LBNL Stores department (called Central Stores and Craft Stores) is divided between a number of buildings on site and in downtown Berkeley. Central Stores, in downtown Berkeley, offers both a regular ordering process (2-5 day delivery) and a rush order (same or next day) delivery service. Same day counter service is also available. Craft Stores, located on site, stocks many of the most commonly needed items and provides counter service for immediate pick-up.

Locating Items

LBNL Stores uses a system of catalogs and order forms for all supply orders, whether the item is in stock or must be ordered from an outside distributor. Users can determine whether the items they need are available by consulting LBNL Stock Catalogs available at the User Services area in Building 6 and at the ALS User Office in Building 4. The Supplemental Stores Stock Catalog lists available items by catalog number and tells:

- (a) whether LBNL keeps them in stock
- (b) what they cost, and
- (c) where the items are located (i.e., Central Stores, Craft Stores, or elsewhere).



The LBNL Stores Order Desk (ext. 6224) can assist you in locating and ordering items from LBNL Stores or other sources; and the ALS User Office in Building 4 can help with the ordering process if it is unfamiliar to you.

LBNL Stores Order Desk
Phone Ext. 6224
Hours 8 A.M.–12 P.M. and 1–4 P.M.
Monday–Friday

Central Stores Central Stores maintains most types of supplies and has LBNL Stock Catalogs and order forms on hand.

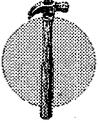
Routine Orders

LBNL Stores stocks many items useful to ALS users. To obtain an item, a Material Order Form (available in the User Services area in Building 6 and at the ALS User Office) should be completed and faxed to Central Stores at ext. 4747. The order will be delivered to the ALS within 2–5 days. If you require faster service, and the item is in stock, you may use counter service or the procedure for rush orders outlined below.

Rush Orders

Central Stores has a rush order truck that leaves Building 903 at 10 A.M. Monday–Friday and will deliver orders to the location you specify. Items ordered before 10 A.M. may be delivered the same day depending on the volume of orders. Orders placed after 10 A.M. will be delivered the following day. To place a rush order, call ext. 6224 or fax a completed order form to ext. 4898.

Continued on page 38



Experiment Support, continued

Counter Service

Users requiring immediate service may pick up their orders by going directly to the counter at Central Stores in Building 903. It is advisable to phone ahead of time (ext. 6224) to ensure that the item is in stock.

Central Stores

Location Building 903, 2700-7th Street
(near Ashby), Berkeley
Phone Ext. 5268
Hours 7 A.M.–12 P.M. and 1–4 P.M.,
Monday–Friday

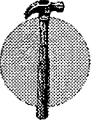
Craft Stores

Craft Stores stocks hand tools, lumber, wire, alkaline batteries, tie wraps, and other such items.

Routine Orders

Craft Stores is located on site at Building 78, Room 101 and provides counter service for immediate pick-up of in-stock items. Consult the Supplemental Stores Stock Catalog for updated information on availability, or call Stores (ext. 5087) to find out whether an item is available before you make the trip. Large orders can be filled faster if you fax a completed order form to ext. 4211 in advance of picking up the items.

If you are not in a hurry for an item, Craft Stores will deliver it to your mailstop, or in the case of large orders, to the shipping/receiving area in Building 7. Routine delivery is 2–5 days. An account number is required for all Craft Stores orders.



Off-Hours Orders

Users who require material from Craft Stores outside regular business hours or on weekends can contact the Plant Maintenance Technician (ext. 5841) for assistance. There is a charge for the amount of time required to pick up and deliver an item; the minimum charge is approximately \$30 for one half hour.

Craft Stores

Location Building 78

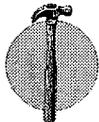
Phone Ext. 5087

Hours 7:00 A.M.–12:00 P.M. and 12:30 P.M.–
3:30 P.M., Monday–Friday, extended hours
and weekend service available; see above.

UHV equipment A small inventory of ConFlat flanges, gaskets, etc., is available. Contact Ray Thatcher (ext. 7412) or an Operations Coordinator (ext. 7464) for information.

Electronic parts Routine, generic electronic small parts are available through the ALS Electronics Maintenance Shop (ext. 5450) in Building 80, Room 137, between 8:00 A.M. and 11:15 P.M. daily. An account number may be required for restocking, depending on the number and value of the items requested.

Purchase orders Special supply orders may be made using an LBNL purchase order with an authorized signature for the account. For information on the purchase order process, contact Judy Zelter (ext. 7225).



Experiment Support, continued

Technical, Mechanical, and Vacuum Services

For electrical, electronic, or mechanical assistance for your beamline or experiment, please contact Beamline Operations Section Leader, Ray Thatcher (ext. 7412). He will assign the appropriate personnel to assist you.

User Account Statements

Users who wish to track expenses charged to their LBNL accounts can order the following monthly statements for \$1.00 per issue:

- Detail Ledger (DET): List of all charges and liens
- Expense Statement (EXP): Summary of all charges and liens
- Monthly Effort by Sub-account (MES): List of charges for LBNL effort [a weekly effort report (WES), is also available]
- Monthly Stores Issues>Returns (MSI): Detailed accounting of LBNL Stores issues/returns.

To request monthly statements, contact John Powell at LBNL Information Systems Services by phone (ext. 4039) or by fax (ext. 5801). An account number and an LBNL Employee Number or LBNL Guest Number are required for this service.

Waste Management

Recycling and trash

LBNL's waste is sorted after collection for recycling. Please use these procedures to make our recycling efforts more effective.

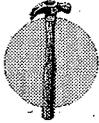
Hazardous waste including batteries—dispose of appropriately in Satellite Accumulation Areas (SAAs); do not place in regular trash receptacles. For information on location and usage of SAAs, contact ALS EH&S Program Manager Georgeanna Perdue (ext. 7407).



Toner cartridges (sealed type only)—pack in the box the replacement came in and send by LBNL mail to the Property Reuse Center (Building 42) for recycling. Contact the Business Machine Coordinator, Monte Clevenger (ext. 6242) for more information.

Other dry, non-hazardous waste—discard in receptacles with clear plastic liners.

Wet waste such as food—discard in receptacles with blue liners to prevent contamination of recyclable paper. Blue bags are sent directly to the landfill, so if your food containers are recyclable (glass, aluminum, some plastics), please make sure they are empty (rinse if necessary) and place them in the clear-lined receptacles.



Other Services

Banking at LBNL

A universal Automatic Teller Machine (ATM) is available 24 hours a day in the Wells Fargo station near the cafeteria (Building 54). The ATM allows cash withdrawals using most ATM cards and accepts deposits to Wells Fargo (only) accounts.

Child Care

For information and referrals on child care programs and providers, contact Diana Attia (ext. 7399).

Concessions

Location Cafeteria lobby (Building 54)

Hours 11:30 A.M.–1:30 P.M.

Monday, Wednesday, Friday

Film developing, postage stamps, LBNL postcards, T-shirts, and gift items are available.

Conference Rooms

To reserve a conference room in Building 6 or Building 4, contact the ALS User Office (ext. 7745). For other conference rooms, consult the LBNL phone book.

Other Services, continued



Copying Services

Self-service copy machines Building 6 User Services Area (near Bay 10)
Building 7 Second floor
Building 10 Ground floor

Large copying jobs Take to a copy center listed below, and provide your account number.

Building 50 Room 214, Ext. 6188
Building 90 Room 1060, Ext. 6584

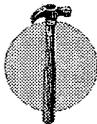
Color copies Take to copy center in Building 50, Room 214. Provide your account number.

Food

Cafeteria Breakfast 6:30–11:00 A.M. Monday–Friday
Building 54 Lunch 11:30 A.M.–1:30 P.M. Monday–Friday

Vending machines Building 2 First floor
Building 10 Ground floor

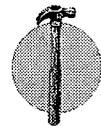
Coffee, refrigerators, microwaves Building 2 Fourth floor
Building 6 ALS experiment floor lounges



Other Services, continued

Library

Location & Phone	Collection	Hours
LBL Main Library Building 50, Room 134 Ext. 5621	Mathematics, physics, chemistry, earth sciences, computer science, and general reference (high-energy physics preprint collection, LBNL-published reports, scientific and technical reports)	Open 24 hours daily Staffed Monday–Friday, 8 A.M.–5 P.M.
Building 90P Ext. 5091	Non-nuclear energy, engineering materials, manufacturers' catalogs, standards and specifications, U.S. phone directories	Open Monday–Friday, 9:00 A.M.–3:30 P.M. Staffed 2:30–3:30 P.M.
Building 46A, Room 1123 Ext. 5382	Engineering trade catalogs on CD-ROMs	Open Monday–Friday, 8 A.M.–5 P.M.
Building 62, Room 339 Ext. 5971	Materials science, surfaces, interfaces and catalysis	Open Monday–Friday, 8 A.M.–5 P.M. Staffed part-time
Donner Library 201 Donner (on UC Campus) Ext. 6201	Biophysics, biochemistry, radiation biology, cancer research	Open Monday–Friday, 8 A.M.–5 P.M.
Users with an LBNL Participating Guest ID Card can obtain a free UCB library card		



Other Services, continued

Mail

Within LBNL and UC Berkeley You can send mail on-site or to campus by using the LBNL mail system. The mailstop is on the first floor of Building 7, near the shipping/receiving area. Envelopes are in the cupboard under the mailslots. Mailstops are listed in the LBNL phone book. The form for internal addresses is:

Recipient Name
MS _____

Receiving surface mail Incoming mail may be addressed to you as follows:

Recipient Name
Lawrence Berkeley National Laboratory
ALS Beamline _____
MS 7-100
1 Cyclotron Rd.
Berkeley, CA 94720

If you are expecting mail, check the "Users" mailslots at the Building 7 mailstop. If you have an office at LBNL, however, you will be assigned a mailstop near your office.

Personal mail The LBNL mail system will not handle personal outgoing mail, but you can post it in the mailbox outside the Wells Fargo automatic teller station near the cafeteria (Building 54). Postage stamps are available at the LBNL concessions booth; see "Concessions," page 42, for hours.

Electronic mail Users can use Telnet to reach their home accounts from LBNL. Users may also choose to be registered in the LBNL Electronic Post Office (EPO), which results in an X.500 listing for the user at LBNL, and/or to obtain their own QuickMail accounts (if using Macintosh computers). For QuickMail accounts or problems, contact Greg Vierra (ext. 4882, glvierra@lbl.gov). For other electronic mail issues, contact Bill Jaquith (ext. 4388, postmaster@lbl.gov).

FAX To send or receive faxed documents, use the fax machine in the User Services area in Building 6. The number is (510) 486-2930.



Other Services, continued

Medical Medical Emergency: Dial 7911

LBNL Medical Clinic Location Building 26
Phone Ext. 6266
Hours 7 A.M.–5 P.M., Monday–Friday

Services offered include:

- First aid
- Medical advice
- Over-the-counter medication
- Transportation to nearest hospital for more extensive treatment

The clinic also tracks on-the-job injuries and illnesses; please report any such problems immediately.

Newspapers

LBNL newspaper LBNL's weekly newspaper, *Currents*, is delivered to LBNL mailstops every Friday. *Currents* includes:

- LBNL news and events
- Cafeteria menus
- Want ads
- Rental listings

Other newspapers Several daily newspapers are available in vending machines outside the cafeteria (Building 54). Selections include the *New York Times*, *San Francisco Chronicle*, *Oakland Tribune*, and *San Jose Mercury-News*.



Other Services, continued

Publication and Presentation Support

The LBNL Technical and Electronic Information Department offers presentation and publishing services in the following areas. Be prepared to provide an account number for any services.

*Technical writing and editing,
word processing*

Ext. 6771
Preparation of documents, scientific articles, and presentation materials; HTML coding for World Wide Web.

Composition services

Ext. 6600
Formatting and layout.

Technical Illustration

Ext. 6600
Charts, graphs, diagrams, line drawings, fine arts.

Design Illustration

Ext. 6600
Viewgraphs, 3-D animation, multi-media presentations, presentations on World Wide Web or CD-ROM.

Photographic services

Ext. 5731
Photography, negative processing, printing, slides, scanning, digital imaging, poster materials, mounting, transparencies, etc.

Video production

Ext. 4237
Shooting, editing, computer graphics, scripted productions, computer display services (to project from a computer screen to a large screen for group viewing).

Audio-visual services

Ext. 6068
Setup and operation of film projectors, overhead projectors, etc.



Other Services, continued

Shipping

Please contact the Beamline Operations Section Leader, Ray Thatcher [(510) 486-7412 or ext. 7412] about any shipments that will arrive before or during your stay, and advise him of any special handling instructions. This is especially important for hazardous materials, where storage and shipment may require advance planning (see "Hazardous Materials," page 50).

Note: All shipping and receiving services are available Monday-Friday only.

Packing Instructions

It is recommended that, whenever possible, materials be shipped in collapsible cardboard boxes with Styrofoam and cellulose "peanuts" (these can be reused when you leave).

It is also recommended that you include a packing slip inside the package with your name and the appropriate ALS address in case of lost or damaged shipments.

Mailing Label Format

All shipments to the ALS should be labeled using one of the formats below. Small packages and expedited mail sent by regular mail, Aeronet Worldwide, Federal Express (FedEx), or United Parcel Service (UPS) should be addressed to Mailstop 7-100; large packages requiring a forklift should be sent to Building 6 "B" Door.

Small Packages

ALS Group
Users' Name
Attn: Ray Thatcher
Lawrence Berkeley National Laboratory
Mailstop 7-100
1 Cyclotron Road
Berkeley, CA 94720

Large Shipments Requiring a Forklift

ALS Group
Users' Name
Attn: Ray Thatcher
Lawrence Berkeley National Laboratory
ALS Building 6 "B" Door
1 Cyclotron Road
Berkeley, CA 94720



Other Services, continued

Receiving shipments at LBNL

Small Packages, Regular or Expedited Mail

All small packages sent by regular mail and shipments sent by expedited delivery service (Aeronet Worldwide, FedEx, or UPS) will be received on the first floor of Building 7, adjacent to the storage area for user equipment. Ronnie Barr (ext. 4494) will notify users when their shipments arrive and coordinate deliveries.

Large Shipments Requiring a Forklift

The ALS recommends that shipments requiring a forklift arrive on weekdays (Monday–Friday) between 8:00 A.M. and 2:30 P.M. because the ALS forklift operators leave at 4:00 P.M. LBNL technicians are available to operate forklifts after-hours for an extra charge, but it is highly recommended that ALS personnel handle the forklift if any delicate equipment is involved.

Equipment Arriving through U.S. Customs

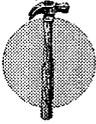
Users are advised to contact Gabriel (Gabe) Ruiz in the LBNL Receiving Office by phone (510) 486-4935, or by fax (510) 486-4898, if they will be receiving items that will be coming through U.S. customs. It is advisable to notify him ahead of time of the name of the overseas carrier and the Air Bill Number so he can have the LBNL customs broker look out for the arrival of their shipments.

Sending shipments from LBNL

Small Packages (Expedited Mail)

Parcels being sent from LBNL that do not require a forklift may be sent from the Building 7 receiving area by Aeronet Worldwide, FedEx, or UPS for expedited delivery. Information and forms for shipping and insurance of packages are available from Ronnie Barr (ext. 4494) in Building 7, Monday–Friday from 9–11 A.M. Packages containing hazardous materials will not be accepted for shipping by expedited mail.

Continued on page 50



Other Services, continued

Large Packages Requiring a Forklift

Shipment of packages requiring a forklift can be arranged through LBNL Shipping (ext. 5084) in Building 69, Monday-Friday between 8:00 A.M. and 4:30 P.M., or through Aeronet Worldwide [(415) 589-2155]. All packages sent via LBNL shipping must have a University of California Shipping Document which is available in the Building 7 receiving area, the User Services area in Building 6, and from the ALS User Office in Building 4.

Hazardous materials

- Ship the smallest quantity necessary for your experiment. Use of hazardous materials on the experiment floor is limited to small quantities.
- Hazardous materials shipped to or from LBNL must be packaged and handled according to U.S. Department of Transportation guidelines, and each shipment must include pertinent Materials Safety Data Sheets (MSDSs).
- **Transportation of hazardous materials by private vehicle or LBNL vehicles is prohibited.**
- Contact the Operations Coordinator (ext. 7464) or Ray Thatcher (ext. 7412) for details on hazardous materials shipments.
- For other information about hazardous materials, contact ALS EH&S Program Manager Georgeanna Perdue (ext. 7407).



Other Services, continued

Showers Showers are available in the following areas (please bring your own towels and toiletries):

<i>Men</i>	Building 80 Men's Room in basement Building 2 Men's Room in main entry area, first floor
<i>Women</i>	Building 2 Women's Room in main entry area, first floor

Telephones

On-site calls Dial the 4-digit extension. To reach an LBNL phone from outside the lab, dial 486, then the 4-digit extension. From outside the 510 area code, dial (510) 486- and the 4-digit extension to reach LBNL phones.

Local calls Dial 9, then the 7-digit phone number.

Long-distance calls From phones on the ALS floor, including the fax machine, dial 9, the phone number, then the access code. Obtain the access code from Ray Thatcher (ext. 7412); be prepared to give him your account number.

Voice mail

- To leave a message, dial the extension and follow the verbal instructions.
- To receive your messages, pick up your handset, press the "VMBX" button, and follow the verbal instructions.
- Instructions for checking messages remotely and personalizing your voice mail are in the LBNL phone book.

Continued on page 52



Other Services, continued

LBNL phone book If there is not a copy at your beamline, you can get one from the ALS User Office on the main floor of Building 4. The book contains:

- Phone listings for LBNL employees, principal universities and laboratories; the Department of Energy, UC Berkeley, and on-site fax machines.
- Country and city codes for international calls and area codes for U.S. calls.
- Information about electronic mail, LBNL organizational charts, and maps of LBNL.

ALS Operations Telephone Directory This directory listing phone numbers often needed by beamline users should be available at each beamline. For additional copies, contact the ALS receptionist.

Pay phone There is a pay phone in the lobby of Building 6 for personal calls.



Quick Guide to Weekend Services

Item	Availability During Weekends
Food	A selection of food and beverages is available from vending machines located on the first floor of Building 10. Coffee makers, microwave ovens, and refrigerators are available in the ALS experiment floor lounges.
Laboratories and Clean Assembly Room	The Chemistry Laboratory in Building 10, Room 102, is open 24 hours daily. Access on weekends to the Clean Assembly Room in Building 10, Room 106, must be arranged in advance by contacting Ray Thatcher (ext. 7412).
LBNL Shuttle Buses (on- and off-site)	Not available.
Libraries	The LBNL Main Library in Building 50, Room 134, is open 24 hours daily.
Machine Shop	Open to qualified users who have completed safety orientation for use of the Machine Shop facilities. A key can be obtained from the Control Room in Building 80, Room 140. At least two people must be present in the machine shop whenever equipment is being used.
Parking	Users without a parking permit who need to drive to the ALS on weekends (because there is no LBNL shuttle bus service) can obtain a same-day parking pass by presenting their LBNL identification to the security guard at the main entrance.
Reception Center	Closed
Shipping	Not available.
Supplies	LBNL Stores (Central Stores and Craft Stores) are closed. Emergency supplies can be obtained from Craft Stores by contacting the Plant Maintenance Technician (ext. 5841). See page 39 for more information.
Technical, Mechanical, and Vacuum Services	Contact the Operations Coordinator (ext. 7464) for assistance.

Nearby Diversions





Nearby Diversions

Bancroft Library

Paintings of early California, rare books display.
Weekdays 9 A.M.–5 P.M., Saturday 1–5 P.M.
UC Berkeley campus
642-6481

Berkeley Public Library

Lends books, music and video tapes.
Monday–Thursday, 10 A.M.–9 P.M.
Friday–Saturday, 10 A.M.–6 P.M.
Sunday 1–5 P.M.
2090 Kittredge St. (at Shattuck), Berkeley
644-6100

Judah L. Magnes Museum

Jewish art and artifacts.
Sunday–Thursday, 10 A.M.–4 P.M.
2911 Russell, Berkeley
549-6950

Lawrence Hall of Science

Science exhibits, display of E.O. Lawrence's awards and scientific papers, bookstore, classes for children.
Daily 10 A.M.–5 P.M.
Centennial Drive above LBNL
642-5132

Paleontology Museum

Dinosaur and fossil exhibits, map collection.
Monday–Friday, 8 A.M.–5 P.M., Weekends 1 P.M.–4 P.M.
Valley Life Sciences Building, UC Berkeley
642-1821



Nearby Diversions, continued

Phoebe Apperson Hearst Museum of Anthropology

Exhibits, lectures.

Wednesday–Sunday, 10 A.M.–4:30 P.M.

Thursday 10 A.M.–9 P.M.

Kroeber Hall, UC Berkeley campus

643-7648

Strawberry Canyon Recreation Area

Swimming and tennis. Call for rates and availability.

Centennial Drive near stadium, Berkeley

643-6720

Tilden Park

Hiking — throughout the park, which is located off Grizzly Peak Blvd. uphill from LBNL.

Golf — 18-hole course, practice range, putting green, sand trap, grill. Call for green fees and reservations.

Take Cyclotron Rd. to top of hill from LBNL, cross Grizzly Peak Blvd., descend on Golf Course Rd.

848-7373

Swimming — Lake Anza.

April–October: 11 A.M.–6 P.M., \$2 adult admission.

October–March: 5 A.M.–10 P.M., free, no lifeguard on duty.

Take Centennial Dr. to top of hill from LBNL, cross Grizzly Peak Blvd., descend on Golf Course Rd., follow signs to Brazil Room, turn left on Wildcat Canyon, follow signs to Lake Anza.

848-3385

Botanic Garden — Native California plants and exhibits.

Daily 8:30 A.M.–5 P.M.; tours Saturday, Sunday at 2 P.M.

Take Cyclotron Rd. to top of hill from LBNL, cross Grizzly Peak Blvd., descend on Golf Course Rd., turn right on Shasta, park at bottom of hill across street from the Botanic Garden.

841-8732



Nearby Diversions, continued

UC Botanical Garden

Plants from around the world.

Daily 9 A.M.–4:45 P.M.

Downhill from LBNL's Strawberry Canyon gate on Centennial Dr.; accessible by LBNL shuttle.

642-3343

University Art Museum

Paintings, sculpture, ceramics, textiles, photography, film programs, cafe.

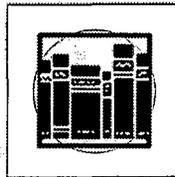
Wednesday–Sunday, 11 A.M.–5 P.M.

Thursday, 11 A.M.–9 P.M.

2626 Bancroft Way, Berkeley

642-0808

Reference





Acronyms

AFRD	Accelerator and Fusion Research Division
ALARA	As Low As Reasonably Achievable
ALS	Advanced Light Source
ALSUA	Advanced Light Source Users' Association
APS	Advanced Photon Source
ATM	Automatic Teller Machine
BART	Bay Area Rapid Transit
BNL	Brookhaven National Laboratory
CR	Control Room
CXRO	Center for X-Ray Optics
DOE	Department of Energy
EF	Experiment Form
EH&S	Environment, Health and Safety
EIC	Experimenter in Charge
EMF	Experiment Modification Form
ESS	Experiment Summary Sheet
ICS	Integrated Communications System
LAN	Local Area Network
LANL	Los Alamos National Laboratory
LBNL	Lawrence Berkeley National Laboratory



Acronyms, continued

LLNL	Lawrence Livermore National Laboratory
LOTO	Lockout/Tagout
MS	Mailstop
MSD	Materials Sciences Division
MSDS	Materials Safety Data Sheet
NSLS	National Synchrotron Light Source
ORNL	Oak Ridge National Laboratory
PAC	Program Advisory Committee
PC	Personal Computer
PRT	Participating Research Team
PSP	Proposal Study Panel
SAA	Satellite Accumulation Area (for hazardous wastes)
SNL	Sandia National Laboratory (NM in New Mexico or CA in California)
SSRL	Stanford Synchrotron Radiation Laboratory
TEID	Technical and Electronic Information Department
UC	University of California
UEC	Users' Executive Committee



Description Of Forms

Experiment Form for ALS Users

The Experimenter in Charge (EIC) is sent this form shortly after the proposed experiment is accepted, and submits it to the ALS at least two weeks before the experiment time is scheduled to start. The form describes the experiment, names the EIC and the experiment team members, describes the use of hazardous items, etc. The ALS uses this form to assess what special services and user safety training are needed before the experiment can begin and how much time these will require. Providing as much accuracy and detail as possible will help prevent delays to the experiment. The form is available from the ALS Administrator (ext. 6166) and Ray Thatcher (ext. 7412).

Experiment Summary Sheet (ESS)

This form must be posted at the beamline and signed-off (approved) before experiment work begins. The ALS completes it based on information in the Experiment Form submitted by the Experimenter in Charge. Before signing the Experiment Summary Sheet (ESS), the ALS verifies that users have completed the required safety training and that the equipment meets all safety standards, and the ALS clears the equipment and users for site access. The form is signed by representatives from ALS Mechanical, Electrical, User Support, and Environment, Health and Safety (EH&S) sections. The form is valid for six months.

Experiment Modification Form (EMF)

The Experimenter in Charge (EIC) must submit an Experiment Modification Form to make either a minor or a significant change to an approved experiment. Significant changes (such as adding a hazardous chemical or a Class IIIb or IV laser) may necessitate additional safety training or procedures. The form is available from Ray Thatcher (ext. 7412). The EIC submits the completed form to the ALS User Administrator, and the form is reviewed with the same criteria used for the Experiment Form. If the change is approved, a new or revised Experiment Summary Sheet must be posted at the experiment.



Description Of Forms, continued

Experiment Renewal Form

An Experimenter in Charge requesting an extension of time for an approved experiment submits this form and any corresponding schedules from the Experiment Form to the ALS User Administrator. The form is available in the User Services area in Building 6, from Beamline Operations Section Leader Ray Thatcher, and from the ALS User Administrator.

User Services Questionnaire and End-of-Run Summary

We would like your comments about your experience at the ALS. When you near the end of your stay at the ALS, or if you are leaving for an extended period of time, please fill out a User Services Questionnaire and End-of-Run Summary. Copies are available in the User Services area in Building 6, and from the Beamline Operations Section Leader, Ray Thatcher. Return the completed form to Ray Thatcher, an Operations Coordinator, or to the ALS User Office when you turn in your radiation badge and keys.



LBNL Policies

Controlled Substances

The use or possession of any controlled substance, including alcoholic beverages, is prohibited, except as prescribed by a physician.

Smoking

Smoking is not permitted inside any building at LBNL. Smoking areas with ash cans are provided outside at many doorways. This is a high fire danger area; please dispose of smoking materials carefully.

Vehicle Safety

Rules and enforcement

Drivers on LBNL property must comply with the California Vehicle Code and LBNL traffic and parking regulations. University Police patrol the property and issue citations.

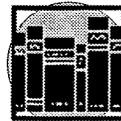
Speed limit

The maximum speed on LBNL property is 25 miles per hour (40 kph). Lower speeds are often necessary because of hilly terrain, wildlife, road repair, wet weather, poor visibility, and pedestrian traffic.

Parking

Park only in designated areas and in accordance with your parking permit (see "Parking," page 13).

Other Sources of Information



ALS/LBNL Information on the World Wide Web

The ALS and other groups at LBNL are included in the World Wide Web, accessible through the Internet using a hypertext browser, such as the National Center for Supercomputing Applications (NCSA) Mosaic.

To access ALS information, including storage ring status and scheduling information, choose "Open URL" from Mosaic's File menu and type:

http://beanie.lbl.gov:8001/als/als_homepage.html

ALS Literature and Publications

ALS brochures and newsletters are available from the ALS User Office in Building 4.

ALSNews

ALSNews is a biweekly electronic newsletter which provides the latest information on ALS research, operations and workshops. To become a subscriber, send a "subscribe me" message, with a complete internet address to:

alsnews@lbl.gov

Current and past issues of *ALSNews* are also available on the World Wide Web ALS HomePage listed above.

ALS Safety Handbook

An overview of health and safety issues at the ALS. All users are required to read this handbook. Available in the User Services area in Building 6.

Building Emergency Plan

Detailed description of how to respond to emergencies. Available at every beamline and from the ALS User Administrator.



Other Sources of Information, continued

Currents The weekly LBNL newspaper, *Currents*, contains news about LBNL, want ads, rental listings, and cafeteria menus. It is delivered to LBNL mailstops on Friday afternoons.

**LBNL Chemical Hygiene and Safety Plan
PUB-5341** Guidelines and requirements for meeting LBNL standards for chemical hygiene and safety and for minimizing risks of working with chemicals. Available from the ALS User Administrator.

**LBNL Health & Safety Manual
PUB-3000** Guidelines and requirements for meeting LBNL standards for the safety of people, facilities, and the environment. Available from the ALS User Administrator.

Introduction to ALSnet Brochure describing how to connect to the computer system at LBNL. Available in the User Services area in Building 6.

LBNL Phone Book, ALS Operations Telephone Directory Sheet Available at every beamline or from the ALS User Office in Building 4.

User Advisories Guidelines for how to meet LBNL requirements in areas of concern to users, such as special safety issues, seismic standards, etc. Available in the User Services area in Building 6, from Beamline Operations Section Leader Ray Thatcher, from any Operations Coordinator, from the ALS User Administrator, or electronically from a Macintosh connected to ALSnet (use the Chooser: AppleShare/als zone/USER INFO server (guest)/USER INFORMATION/Advisories).

Whom to Call

and why

ALS ADMINISTRATION

Proposal forms, experiment forms, registration forms

Elizabeth Saucier, ALS Administrator
Lawrence Berkeley National Laboratory
Advanced Light Source
MS 80-101
Berkeley, CA 94720
Tel: (510) 486-6166 or 486-4257
Fax: (510) 486-4960
Email: alsuser@lbl.gov

ALS USER OFFICE

Administrative assistance

Tel: (510) 486-7745 or 486-4257
Fax: (510) 486-4773
(Same address as ALS Administration)

ALS USER LIAISON

User issues

Fred Schlachter
Tel: (510) 486-4892
Fax: (510) 486-6499
Email: fred_schlachter@lbl.gov
(Same address as ALS Administration)

LBL RECEPTION CENTER

Registration, general safety training

Lawrence Berkeley National Laboratory
Reception Center
MS 65
Berkeley, CA 94720
Tel: (510) 486-6155
Fax: (510) 486-6169

OPERATIONS COORDINATORS

First contact for questions or assistance on experiment floor during ALS operations, safety regulations and training, beamline inspection and documentation.

Ext. 7464

BEAMLINE OPERATIONS SECTION LEADER

Technical assistance, work order requests, incoming shipments, storage, laboratory use, account numbers, scientific equipment hookup or repairs, etc.

Ray Thatcher

Ext. 7412

Pager: dial 1272; after long beep, dial 602; after beeps, leave message and phone number.

CONTROL ROOM OPERATORS

Emergencies, machine operations information

ALS Control Room

Ext. 4969

BUILDING 6 FLOOR MANAGER

OPERATIONS GROUP LEADER

Facility safety, operations scheduling, general operations/coordination

Bob Miller

Ext. 4738

Pager: dial 1272; after long beep, dial 838; after beeps, leave message and phone number.

SAFETY PERSONNEL

Safety procedures, hazardous wastes, etc.

Georgeanna Perdue, ALS EH&S Program Manager

Ext. 7407

Pager: dial 9-466-0248; dial your extension, then the # sign; hang up and wait for a return call.

Advanced Light Source Administration
Lawrence Berkeley National Laboratory
MS 80-101
University of California
Berkeley, California 94720