



Operations and Scheduling

Jeff White - CHESS, Cornell University

This past year has been a busy year for the CHESS staff. Although we have had major down periods, CHESS has continued to deliver beam whenever possible to the user community. While these shutdowns are a major inconvenience to the CHESS users, they are essential for performing upgrades and construction that is needed to increase the throughput and reliability of the facility. Due to the inordinate amount of down time in the past year, the future schedule has been adjusted to increase the amount of running for the various experimentalists. We will have a short down this fall in order to do standard maintenance but will otherwise continue running until we have an extended down in 2001. The plans for the extended down are numerous and quite necessary for the future development of the laboratory. Reconfiguration of elements in the storage ring (CESR) and the High Energy Physics detector (CLEO) are required in order to accommodate the new CHESS G-Line, obtain higher beam currents, deliver higher flux for the synchrotron users, and obtain higher luminosity for CLEO, as well as accomplishing more reliable operations.

The past year has seen many changes. CLEO II has been decommissioned after many years of very productive physics. CLEO III is a mostly new and updated detector that will be used for high-energy physics for the foreseeable future and is in the process of being commissioned. In the past two years there has been a systematic replacement of the copper RF cavities with superconducting niobium cavities. This is indeed a milestone for the laboratory and has been crucial for increasing the beam currents in the storage ring. Laboratory personnel also upgraded many other portions of the machine in the past year:

- n The linac has been overhauled to provide more beam. This has reduced injection times.

- n The synchrotron (booster) ring has been upgraded to provide better throughput of beam to the storage ring. This decreased the time needed for injection.

- n The CESR vacuum elements, where the particle beam and X-ray beam chambers are separated, have all been upgraded and replaced to accommodate higher machine currents.

- n Numerous vacuum gate valves have been replaced to assure more efficient maintenance and improve the overall vacuum in CESR.

- n Vacuum chambers around the CLEO detector have been modified to provide better vacuum and a larger aperture for higher current running.

The list goes on but the point is that there was a great deal of work accomplished to provide more and better beams to the synchrotron and high energy physics communities. CHESS personnel were involved in some of the previously mentioned work but were also working on other projects as well.

- n The largest project for last year was the civil construction for an additional building to accommodate a new wiggler beam line, the CHESS G-line, and corresponding stations (see D. Bilderback and J. Brock article on page 19).

- n The F-line optics area has been completely torn down and reconstructed to provide better beams to our users (see article by E. Fontes, et.al. on page 17).

- n MacCHESS personnel have had the F-1/F-2 experimental area enclosed to provide a more appropriate working environment for the users. This effort was lead by Mike Cook.

There is also a long list of work to be accomplished for the next few years.

- n Testing of Superconducting Interaction Region Quadrupoles for installation near CLEO to help with the focussing properties for the High Energy Physics experiment.

- n Investigation of installation of additional

superconducting RF cavities into the storage ring to achieve particle currents of up to 600mA per beam.

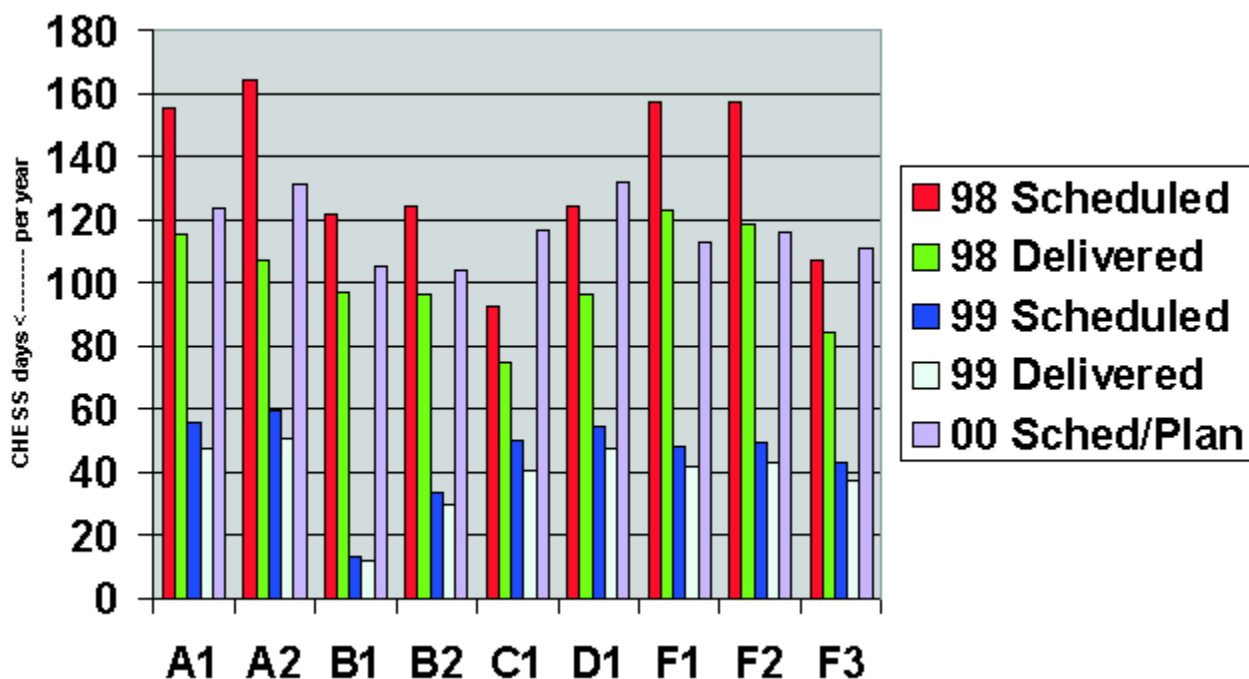
n Reconfiguration of the storage ring to accommodate the new wiggler that will provide radiation to the A-line and the new G-line.

n Installation of the G-line front-end to provide beam to the optics room for the new CHESS G-line stations.

n Modification and upgrade of the CHESS A-line to install a water-cooled mirror upstream of the A-1 station optics.

We all wish a hearty thanks to a number of individuals who have recently left after a number of years of hard and dedicated work. Stefan Kycia has gone to play a key role in the Laboratorio Nacional de Luz Sincrotron in Brazil. Chuck Henderson has moved on to the Dept. of Space Sciences. Park Doing has gone on to get his Ph.D. while Jim LaLupa and Ben Clark have moved on to “program” for a better tomorrow. Operators Mark Bowen, Eric Spalding and Brian Carroll have recently departed to further their education and careers while Alan Pauling has become a beamline engineer

for the Cornell G-line. On the plus side we have hired on additional operators (Brian Clasby, Dave Jones, Tom Krawczyk, Ted Luddy, and Phil Sorensen) to supplement the existing operator staff (Roger Hasse, Bob Seeley and Lee Shelp). Congratulations to Dana Richter, who has been promoted for his dedication and continuous hard work (see L. Walsh article). Laura Brown has recently been hired to assist Virginia Bizzell in the front office. Lana Walsh has been promoted to full-time USER coordinator. Jerry Houghton and Rachel Kopsa have been hired to technically assist with the many upgrades that are taking place. Chang-Sheng Zha has been hired as a staff scientist to lead the efforts in the field of High-Pressure Diamond Anvil Cell work replacing Keith Brister, who left to work at the Advanced Photon Source in Chicago. Detlef Smilgies has recently been hired as a staff scientist for the CHESS/Cornell G-line. Under the direction of the new director Sol Gruner, with help from recently promoted assistant director Ernie Fontes and the rest of the laboratory personnel, we look forward to a bright and productive future. Keep your eye on the CHESS Web Site www.chess.cornell.edu for the Facility Description that is currently being updated to reflect recent changes.



Comparison of the number of days that CHESS users were scheduled for beam versus the number of days received, by experimental station from the year 1998. The difference in time is due to unscheduled downtime, because of equipment failures. Note that the 1999 calendar year had two major interruptions in the running for modifications to the laboratory, thus significantly reducing the time available. For the year 2000 we are already approaching or surpassing the amount of beamtime for 1999. With extensive running still scheduled for the year, we anticipate the number of days delivered in 2000 to be comparable to that of 1998.

CHES Operations Schedule for 2000-2001

2000 Dates to remember:

June 20,21	CHES User Mtg. Dates
Sept.	Short maintenance shutdown
Oct.	Luminosity tuning
Oct. 31	Proposal Submission Deadline

No major shutdowns are scheduled for 2000, however there will be a brief shutdown for maintenance and luminosity tuning.

There remains a great deal of uncertainty in the operations schedule for the year 2001. Check the CHES web site www.chess.cornell.edu for updated information about the schedule.

There will be an extended shutdown in 2001 for:

1. Installation of superconducting quadrupoles around CLEO for better focussing of particle beams.
2. Rearrangement of RF cavities to accommodate the new 50 pole CHES wiggler.
3. Installation of the new 50 pole CHES wiggler for A and G-lines.
4. Installation of the new CHES G-line front end.
5. Installation of new front end optics on CHES A and F-line.

2001 Dates to remember:

Feb.	Earliest tentative time for extended shutdown
April 30	Proposal Submission Deadline
June 19,20	Tentative CHES User Mtg. Dates
Oct. 31	Proposal Submission Deadline



From the Staff

Brief Overview of Proposal Submission/Review Process at CHES

Lana Walsh - CHES, Cornell University

CHES accepts several types of proposals from users seeking beamtime: **Express Mode** proposals for brief measurements, generally up to 48 hours in duration, **Feasibility Studies** for short period access to test an idea or procedure, up to 4 days duration, **Standard Proposals** for allocation of beamtime over a period of up to 2 years, and **Program Proposals** for a series of intellectually linked experiments, also covering a period of up to 2 years, renewable for an additional 2 years.

Express Mode and Feasibility Studies may be submitted **at any time** on an on-going basis. Express Mode proposals (which are now available for most beamlines) are peer reviewed by committee and Feasibility Studies are reviewed by CHES staff. Principal Investigators are notified as soon as their proposal completes the review process and is approved for scheduling. Beamtime is allocated interspersed with Standard and Program Proposals as it becomes available.

Standard and Program Proposal submission deadlines are April 30th and October 31st each year. They are reviewed by independent peer referees whose comments are then considered by the CHES Proposal Review Panel. Each proposal is assigned a final rating which is considered in the allocation of beamtime.

All proposals are reviewed by the CHES Safety Committee and each proposal must be accompanied by an appropriate, up-to-date, Materials Declaration Form (see our website) before it may be scheduled for beamtime.

For further details and updates or to download our proposal forms, check our website: www.chess.cornell.edu or contact our proposal administrator, Lana Walsh at llw3@cornell.edu.

Lana Walsh

