REFERENCE FRAME



A WEEK IN BEIJING

David J. Gross

On 29 May I arrived in Beijing to lecture at the Symposium on Fields, Strings and Quantum Gravity, held under the auspices of the China Center of Advanced Science and Technology and the direction of T. D. Lee and Guangzhao Zhou (president of the Chinese Academy of Science).

Because of the turmoil in China it had been very unclear whether the meeting would take place. But after weeks of hesitation, all the foreign participants who were scheduled to come did so. All in all there were 32 physicists from abroad, including families: Sidney Coleman, Stanley Deser and family, Gerard t'Hooft and wife, Yuval Ne'eman and wife, Ashok Sen and wife, Henry Tye and family, Cumrun Vafa and family, Sasha Zamolodchikov, and I with my wife and daughters. There were about 80 Chinese participants, ranging from senior scientists to graduate students.

Until the shooting began the visit was delightful. When we arrived in Beijing all was peaceful, no soldiers were visible, and no one expected any violence. All of the Chinese participants made it to Beijing and were very enthusiastic about the symposium, the physics and the prospects for reform in China. We were located at the lovely Fragrant Hill Sleeping Buddha Hotel, among a beautiful set of Buddhist temples in the midst of the botanical gardens, almost in the outskirts of Beijing. The accommodations were comfortable, and the food was excellent. In fact because of the troubles, T. D. managed to get two of China's top chefs, who were idle, since their restaurant in the Forbidden City was closed, to cook for us.

Some of our planned activities had to be curtailed, but others went on. We saw the Great Wall, but not the Forbidden City, which was closed. Instead we visited Tienanmen Square and talked to the students encamped there. There was a feeling of excite-

David Gross, a particle theorist, is Eugene Higgins Professor of Physics at Princeton University.



Participants in the Symposium on Fields, Strings and Quantum Gravity and the Symposium on Relativistic Heavy-Ion Collisions at the Temple of the Sleeping Buddha in Beijing. First row, left to right: Yuval Ne'eman, Gerard t'Hooft, T. D. Lee, Guangzhao Zhou, Stanley Deser, Sidney Coleman, David Gross, Alexander Zamolodchikov. Second row: Shoji Nagamiya, Minghan Ye, Maurice Jacob, Cumrun Vafa, unidentified. Third row: Henry Tye, Ashok Sen, Rudolph Hwa, Hans Gutbrod. (Photo courtesy of Lee.)

ment and hope, almost euphoria. Certainly no one anticipated the massacre that was to occur.

On Friday night, 2 June, after an interesting tour of BEPC, the impressive new electron-positron collider in Beijing, the whole party boarded a special sleeping car on the night train to Da Tong, a coal mining center near the Monogolian border. Da Tong, where, incidentally, much of the now infamous 27th People's Army is stationed, is the site of the fabulous Yungang cave temples. We toured the caves on Saturday, and when night fell we took the train back, perhaps only hours behind the 27th. We had no idea of what had happened that night in Beijing until we arrived at 7:00 am on Sunday morning at the train station, a kilometer from Tienanmen Square. There we saw hundreds of troops, the bus that was to take us to the hotel was absent, and we heard about the massacres that were still going on.

We called T.D., who was very concerned for our safety. He contacted his friend the mayor of Beijing,

who offered to arrange a military escort for us. This offer was politely declined since military transport was clearly not the safest way to travel. In fact on the way back to the hotel we saw dozens of burning military trucks and armored vehicles. We watched as a crowd of angry civilians stopped a police car, removed the policemen, overturned the car and set it on fire. Finally we found some taxi-vans, whose drivers agreed to take us. It was a harrowing drive back, through and around the many barricades and burning cars. However, there was no anger directed at foreigners and we all made it back safely.

When we got back to the hotel we saw the bus that was meant to pick us up, splashed in blood. Our driver told us that on the way to the station it passed by Tienanmen Square, where soldiers were not allowing ambulances to enter. Three wounded students were loaded on our bus, and the driver took them to a hospital. Two died en route.

There was no real danger at the Sleeping Buddha, but T. D. and the



LOOK TO QUANTUM DESIGN

Our Magnetic Property Measurement System is the solution to your need for versatility in an automated SQUID Magnetometer.

Offering the sensitivity of a SQUID sensor and the flexibility for resistivity and Hall

Effect measurements. In use worldwide, it has a temperature range of 1.9 to 400 Kelvin and up to 55,000 gauss in applied field. The kind of versatility and reliability needed in today's research laboratories.

We've got the solution.



11578 Sorrento Valley Road, Suite 30 San Diego, California, USA 92121-9704 Fax: (619) 481-7410 Telex: 494-3226 1 (800) 289-6996

Circle number 11 on Reader Service Card

other organizers decided to officially end the meeting, which was half over, and arrange a quick exit. This was an excellent decision since they were able to purchase new tickets for everyone before the real panic began.

Sunday night some of the physics students who were attending the symposium and who had taken part in the events of the previous night and day returned to the hotel and told us their horrifying stories. You have heard and read and seen much of this in the West, but hearing and seeing it firsthand was very difficult and sad. To quote one eyewitness: "When the students drew back and escape, some weren't able to escape in time. Tanks went behind and crushed them.... Students [who] left last saw soldiers didn't permit wounded to leave, shot them. [The soldiers] didn't permit medical personnel to serve them. Two nurses were killed. They burned the bodies of the dead, [along with] some other things, tons of garbage and clothing with gasoline. They don't want anyone to know [what happened]."

Most sad was to witness the reaction of our Chinese colleagues, who were totally shattered by the events and extremely worried about the effect all of this will have on their lives. Many stated that these events would set China back for many, many years.

I hope not.

We spent two more days in Beijing, rumors and horror stories in abundance. We debated whether it was appropriate to continue to lecture on physics under such circumstances. In the end we continued our lectures on quantum gravity, black holes, wormholes and strings until we left, addressing an audience of Chinese scientists who were desperately hoping that life and physics could go on as before.

On the last day my family and I drove downtown to arrange airline tickets. Beijing was almost empty of people, most shops were closed, and the streets were full of burnt vehicles. Soldiers could be seen everywhere, many with drawn weapons, sometimes surrounded by ordinary people who seemed to be arguing with them.

It was with great relief that we made it to the plane on Tuesday night, through an airport that was close to panic, and with even greater relief when we stopped onto French soil 27 hours later. It has since been difficult to return to normal life. The events of our week in Beijing are hard to put aside. Most of all one cannot stop thinking of all the friends and colleagues who were left behind, and of the future that faces them.

Improve your Low Level

Light Measurements

... Two Ways!



MODEL 197 LIGHT CHOPPER

- Single/Dual Frequency operation
- Simple Frequency Control using Pushbuttons or External Oscillator
- 15Hz-3KHz Operation for your Detector

MODEL 113 LOW NOISE PREAMP

- Battery Operation Eliminates Line Interference
- Single Ended/Differential Input Allows Uncompromised Detector Matching
- AC or DC Coupling provides Optimized Low Frequency Operation



New Lower Price

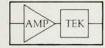
To improve your low level light measurements, consider our high performance components. For free literature, call or write today.

SEGEG PRINCETON APPLIED RESEARCH

P.O. BOX 2565 • PRINCETON, NJ 08543-2565, USA • 609/452-2111 • TELEX: 843409

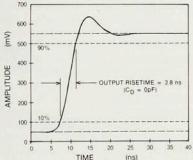
LEV881

Circle number 12 on Reader Service Card



CHARGE SENSITIVE PREAMPLIFIER

A250



RUN SILENT — RUN FAST!!! A NEW STATE-OF-THE-ART

EXTERNAL FET

FET CAN BE COOLED

NOISE: < 100e-RMS (Room Temp.) < 20e-RMS (Cooled FET) POWER: 19 mV typical SLEW RATE: > 475 V/ μ s GAIN-BANDWIDTH f_T > 1.5 GHZ



A 2 5 0

If you are using: Solid State Detectors, Proportional counters, Photodiodes, PM tubes, CEMS or MCPs and want the best performance, try an AMPTEK CHARGE SENSITIVE PREAMPLIFIER

Send for Complete Catalog

eatures:

Low noise (less than 100 electrons RMS) Low power (5 milliwatts) Small size (Hybrids) High Reliability

Radiation hardened (as high as 10' Rads) One year warranty

onlications:

Aerospace
Portable Instrumentation
Nuclear Plant
Monitoring
Imaging
Research Experiments
Medical and Nuclear

Electronics
Electro-Optical
Systems and others.



AMPTEK INC.

6 DE ANGELO DRIVE, BEDFORD, MA 01730 U.S.A. (617) 275-2242

SOUTH AUSTRALIA FERNIS FTY, LTD., P.O. Almorion, Anniel 2000/22, AUSTRIA, AVAITACA, Vienne 664 318, BELGIUME LANDIE, INTECHMUL N. Y. ALMORIO, CORRESPONDE CORRESPONDE AND AUSTRIA CORRESPONDE AND AUST

Circle number 13 on Reader Service Card