



ASTROPHYSICS & SPACE SCIENCE THEORY GROUP
HYPERVELOCITY IMPACTS & DUSTY PLASMAS LAB
SPACE SCIENCE LAB

CASPER NEWS • Vol. III • No. 2 • Summer, 2001

ASSTG

- Maggie Vasut
- Simeon Trendafilov
- CASPER Interns
- Publications

HIDPL/SSL

- HIDPL Grand Opening!
- Provost Report
- Systems Coming On-Line

Outreach

- The Physics Circus
- Innovation Award
- CASPER Summers

Grants/Proposals

- NSF REU/RET
- HOTSTC
- NASA Adv. Concepts

Graduate

Maggie Vasut successfully completed the preliminary exams and graduated with her M.S. in August of 2001. She will be attending Seminary at Baylor starting in the fall.

Congratulations, Maggie.

CASPER Graduates

Simeon Trendafilov recently accepted a position with Dr. Marlan Scully at Texas A&M. Additionally, several of our Interns recently accepted jobs with Atmel in Irving, TX. Congrats guys!

Congressman Chet Edwards

The dedication of the HIDPL finally came to pass in April of 2001. The upper administration of Baylor and TSTC along with dignitaries from Waco and the State of Texas attended the gala and then toured the lab afterwards guided by CASPER faculty, staff and graduate and undergraduate students. Congressman Chet Edwards made the trip from Washington D.C. to be in attendance and was one of the keynote speakers. In addition, first light was celebrated on CASPER's newest plasma system. For more details along with pictures, check the CASPER News section of the web page.



Dr. Robert Merlino - Department of Energy Fellow

In March, Dr. Bob Merlino (University of Iowa) visited CASPER as part of the Department of Energy's Visiting Scholar program. While at Baylor, Dr. Merlino had dinner with CASPER faculty, staff and students, presented a research seminar to CASPER and then was the seminar speaker for the week within the Physics Department. This wonderful opportunity allowed CASPER undergraduate and graduate students to interact with a true expert in the field of dusty and space plasma physics.

CASPER Research

HIDPL/SSL - The GEC Reference Cell is now complete and the primary diagnostics along with both RF and DC power supplies are in place. Initial cell calibration runs are scheduled for the fall semester with the hope that actual experiments will begin early in 2002. The LINAC accelerator and laser systems are also being brought on line. If everything remains on schedule, it promises to be a *very* interesting year.

Scholars Day - CASPER personnel were responsible for thirteen presentations (over 11% of the total number given within the Graduate School!) at Baylor's Scholars Day which was held on February 14, 2001. All of CASPER's graduate students and a few of CASPER's undergraduates presented their research results. Congrats to everyone involved.

Lunar and Planetary Science XXXII - In March of 2001, four papers were presented (and subsequently published by the Lunar & Planetary Institute) by CASPER faculty and graduate students at the Lunar and Planetary Science Conference held at NASA-JSC. Truell Hyde, Bruce Lindsay, Lorin Matthews, Ray Nazzario, Ke Qiao and John Vasut all presented their results and fielded questions at this international meeting of space scientists. Reprints of these papers are available in the office as well as on the LPI web server.

IEEE Transactions on Plasma Science - In April of 2001, *Computer Simulations of Coulomb Crystallization in a Dusty Plasma* by John Vasut and Truell Hyde was published in the special dusty plasmas issue of the IEEE Transactions on Plasma Science. Reprints of this paper (as well as other recent CASPER publications) are available in the office.

Advances in Space Research - In May, six papers by CASPER personnel were accepted for publication in *Advances in Space Research*. Blue line editions of these should be finished soon with final publication (we hope!) in the fall.

CENTER FOR ASTROPHYSICS, SPACE PHYSICS & ENGINEERING RESEARCH

MAIN OFFICES: P.O. BOX 97316 • BAYLOR UNIVERSITY • WACO, TX 76798-7316

254.710.2511 (Voice) • 254.710.DUST (FAX) • www.baylor.edu/~CASPER

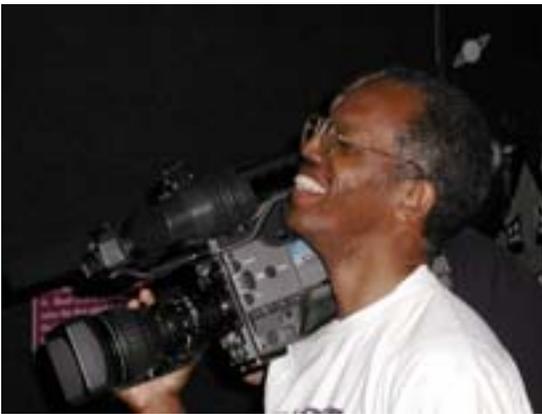
SSL: 254.867.3180 or 254.867.3208 (Voice) • 254.867.DUST (FAX)

HIDPL: 254.867.3167 (Voice)

CASPER Outreach

The Physics Circus

As always, the May Physics Circus (under the direction of Dr. Laura Barge) was a smashing success! Almost 1000 people from cities as far away as Houston and Dallas attended during the week long run. The Circus presents basic physics concepts such as optics, E&M, light and sound in a variety of unique ways.



Mr. Willie Hudson produces the integrated multimedia show. CASPER's own Mr. Jerry Reay and Mr. Mike Cook are responsible for the Laser Light Show while Ms. Kathy Weinberger produces the signage and Ms. Beverly Clark fixes anything else that goes wrong. Next year's Circus promises to be even bigger and better, so stay tuned. More info and additional pictures can be found on the Physics Circus website, which includes both

English and Spanish editions. Congratulations to Dr. Barge and everyone involved!

The Gear Up Innovation Award

Dr. Barge and the Physics Circus team were recently honored with the Gear Up Innovation Award. This award goes to the group that best takes a vision and inspiration and creates a lasting impression on the cohort students. Congratulations to Dr. Barge and everyone else involved.

CASPER Summers

Summers at CASPER are always busy. In addition to the usual CASPER faculty, staff, interns, graduate and undergraduate students, the summer brings students and teachers from around the world to work within the Center. The summer of 2001 was no exception with over sixty people involved in research, education and outreach activities. The majority of these were funded through CASPER's NSF REU and RET grants. Ten REU Fellows from all over the world, six RET Fellows from six surrounding ISD's and eight CASPER Interns were involved in research, education and curriculum development. Additionally, ten High School Scholars (all AP students from the state of Texas) joined the CASPER team for the month of July. They attended classes and received college credit in Laser Electro-Optics (taught by CASPER faculty from TSTC) and Labview (taught by two CASPER graduate students) and spent time in the labs as well. Final research presentations were held over four days in the Physics Department and the IDEAS center. Applications are now being accepted for next year's programs. Outstanding high school, college undergraduate and elementary, middle or high school teachers who are interested can apply via the on-line application, which can be found on the CASPER website.

CASPER in the Classroom

The spring semester saw Dr. Barge presenting CASPER curriculum in settings ranging from the Belton and Waco Home School Associations to a private Christian school in India. All were well attended and drew rave reviews. It appears that Dr. Laura is intent on single handedly establishing CASPER as a worldwide presence!

CASPER in the News

CASPER was featured in a number of media outlets during the spring of 2001. The Waco Tribune Herald along with other local press covered the grand opening and first light ceremony in April and the May Circus received attention as well. In addition, the most recent Provost's Report published by Baylor University features the CASPER partnership. CASPER was also featured at both the annual Waco Chamber of Commerce dinner and the most recent TSTC Board of Regents meeting. For more information, check the CASPER News section of the web page.

CASPER Promo Video

CASPER has contracted with KWBU to produce a CASPER promotional video. Much of the footage was shot during the summer with final production scheduled for the fall semester. The video (which will be entirely digital) will be available in a number of formats and used in current recruitment efforts already in place within CASPER. It will also be placed in every high school within a six county area. Short versions specific to CASPER research, education or outreach areas will also be available on the web.

Need More Information?

If you would like additional information on any of the above, contact Truell Hyde at Truell_Hyde@baylor.edu.