



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

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ASSTG

- Simeon Trendafilov
- Interns
- IEEE Transactions

HIDPL/SSL

- HIDPL Construction Completed!
- New Storage Building

Outreach

- The Physics Circus
- Janice Van Cleave
- CAST

Grants/Proposals

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

Graduate

Simeon Trendafilov successfully defended his dissertation and graduated with his Ph.D in December of 2000. Congratulations, Simeon.

CASPER Interns

Several of our fall Interns took jobs over the break. Most went to Atmel in Irving, TX. Congrats guys!

Senator Phil Gramm

CASPER was inundated with requests for tours during the fall of 2000. Before the dust settled Lynda Johnson, George Kozmetsky and Senator Phil Gramm had all visited the CASPER labs. Of these, the one generating the most interest was the visit by Phil Gramm. The Senator *requested* the visit due to his desire to put (in his words) 'his senatorial stamp of approval' on the CASPER paradigm. As is usually the case when a United States Senator comes to town, his visit generated strong media attention. For more details, check the CASPER News section of the web page.



Dr. William Phillips - Nobel Laureate

On October 10th, Dr. Bill Phillips visited Baylor University as part of the University Chapel program. While at Baylor, Dr. Phillips had dinner with CASPER faculty, staff and students and then presented a public lecture to a full house in room 100 of MM Physics Building. This wonderful opportunity allowed CASPER undergraduate and graduate students to interact with a Nobel Laureate while finding out about the inner workings of NIST. Thanks Dr. Lake (Dean of Chapel) for the chance of a lifetime.

CASPER Research

HIDPL/SSL - Construction on the HIDPL is finally complete! The building has been released to CASPER and equipment is being moved in daily. (The grand opening of the building will be some time during the spring semester.) The parts to the GEC RF Reference Cell are being collected and the supporting framework is under construction. In the SSL, the light gas and LINAC accelerators are being brought on line. If everything remains on schedule, it promises to be a *very* interesting summer.

Scholars Day - CASPER has thirteen (13!) presentations scheduled for Baylor's Scholars Day which will be held on February 14, 2001. If you've ever wanted a complete overview of everything going on within the Center, this is your golden opportunity. The final presentation schedule will be released by the Graduate School during January and posted to their web site.

Honors Colloquium - On October 23, 2000, Dr. Hyde, Dr. Matthews and Bernard Smith presented an Honors Colloquium on *Black Holes and Timewarps* (Kip Thorne) to an interested group of Honors students. Although none were physics majors (more the pity) interest was high and discussion spirited. A spring colloquium has been scheduled for April 2nd on the *Physics of Star Trek*. Everyone interested is invited to attend. For more information on when and where, contact Dr. Hyde or Dr. Matthews.

Funded Grants/New Proposals

NSF REU/RET Program - CASPER has received preliminary approval of its recent REU/RET grant proposal to the National Science Foundation. If final approval is granted, the REU/RET program will receive funding from the NSF for the next three years.

Heart of Texas Council of Governments - CASPER has received preliminary approval of its High School Scholars program from HOTCOG. If final approval is granted, the High School Scholars program will again be funded for the summer of 2001.

NASA Advanced Concepts Study - CASPER was recently invited to act as a subcontractor on a Space Elevator (Tether) Proposal to NASA's Advanced Concepts Program. The PI on the proposal is Dr. Brad Edwards (Los Alamos National Lab) and if funded would have CASPER students conducting damage assessments on epoxy nanontube sections of the tether. (Cool!!)

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CASPER Outreach



The Physics Circus

The December Physics Circus (under the direction of Dr. Laura Barge) was a smashing success! Almost 1000 people from cities as far away as Austin and Dallas attended during the week long run. (An easy method of judging the overall Circus impact is to note that May's event is already almost sold out!) The Circus consists of the Science Theater, the Physics Fun House, an Egg Drop Design contest along with multiple outdoor and indoor exhibits and demonstrations. The Science Theater (starring Bernard Smith, Troy Henderson and Ethan Swint) takes place on a professionally designed stage with an integrated multimedia show on one side and a laser show on the other. Basic physics concepts such as optics, E&M, light and sound are introduced to the audience in a variety of interesting ways. The entire event takes place under theater conditions with Mr. Tim Poertner responsible for the overall set and lighting design. The multimedia show is 'pro quality' as well and was produced by Mr. Willie Hudson. CASPER's own Mr. Jerry Reay and Mr. Mike Cook were responsible for the Laser Light Show as well as keeping everything else operating throughout the week. Ms. Kathy Weinberger produced all the signage and Ms. Beverly Clark had the enviable duty of fixing anything else that went wrong!



The December Circus also premiered over forty brand new, interactive physics exhibits, professionally displayed and lighted in a museum style setting. The Physics Fun House was a hit with students, teachers, parents and (as you can see) the Mayor Pro Tem of Waco. The Egg Drop Design Contest (a student favorite) debuted a calibrated egg drop mechanism designed by TSTC's MET students specifically for the event. May's Circus promises to be even bigger and better and is sure to ignite an interest in physics in all who attend. More pictures (along with additional information) is available at www.baylor.edu/~physcscircus. Congratulations to Dr. Barge and everyone involved!

CAST Conference

Sharon Orcutt and Rick Hartley (CASPER Summer 2000/2001 NSF RET Fellows) along with Dr. Laura Barge presented information on CASPER's Discovery Kits and integrated curriculum modules at the October CAST conference held at Texas A&M. The response to this innovative method for introducing basic physics concepts into the middle school curriculum has been tremendous. Module and Discovery Kit information is also being presented during CASPER Inservice dates this spring. Look for these materials to become available later this year.

CASPER Inservice

Janice Van Cleave

The fall semester saw multiple CASPER Inservice opportunities for middle school, high school and home school educators.

Participants were treated to sessions with Janice Van Cleave, celebrated children's science author and introduced to methods for bringing the Physics Circus into the classroom. They were also made aware of the many opportunities for both teachers and students that CASPER offers through its CASPER Summers program. All in all a great fall!

CASPER in the News

CASPER was featured in a number of media outlets during the fall of 2000. The Waco Tribune Herald published articles on CASPER events in the August 3rd and October 2nd editions and ran a Circus picture on December 15th. Additionally, CASPER personnel were interviewed once on the radio and twice on TV during December and January. Articles about CASPER also appeared in the Chamber Communicator and the Waco Citizen. For more information, check the CASPER News section of the web page. The word is getting out!

Physics Circus Tickets

For Physics Circus Information or to purchase tickets, contact Ms. Beverly Clark at 254-867-3128 or at bclark@tstc.edu.



Need More Information?

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