AN EMBARGO EXTENDING TO THE
TIME OF THE PRESS CONFERENCE
APPLIES TO THE FOLLOWING
INFORMATION

April 10, 2006-------The press briefings listed below will take place at the April Meeting of the American Physical Society (APS), held April 22-25 at the Hyatt Regency Hotel in Dallas. The meeting website is http://meetings.aps.org/Meeting/APR06/APS_epitome. Complimentary press registration can be had by contacting Phil Schewe at pschewe@aip.org. The meeting pressroom will be located in the Hyatt Regency Cherokee Room, while briefings will take place in the Hyatt Baker Room. Pressroom phone numbers are 214-712-7049, 7048, 7047.

Press Conference, Saturday, April 22, 12:45 PM
SUBTLE COSMIC FORCES
Lorentz invariance expresses the proposition that the laws of physics are the same for different observers. This all important principle is a pillar of the theory of special relativity and has been validated in all experiments so far. But the experiments proceed in the hopes that even a slight departure from expected behavior in spacetime might signal an interesting new phase in our understanding of the universe. Eric Adelberger (paper E6.1) and Claire Cramer (H14.1) of the University of Washington will report on their efforts, using a torsion pendulum, to look for various departures from the physics norm, even at the energy scale of 10^-21 eV. Meanwhile, Dennis Danielson (B5.1) of the University of British Columbia will look at comparable cosmic inquiries carried out 23 centuries ago by ancient Greeks, who used no apparatus but only the power of reasoning. He will address the question of "Why it took so long for Aristotle to die."

Press Conference, Sunday, April 23, 11 AM
FURTIVE NUCLEAR ACTIVITY
High tech risks are best addressed with high tech science. Three researchers will address three different dangers that can be mollified at least to some degree with physics-based methods. Paul Richards (richards@ldeo.columbia.edu) of Columbia University will describe techniques for picking out nuclear detonations from seismic data packed with thousands of daily events caused by earthquakes and chemical explosions. Richards will also be collecting the APS Szilard Award for his work in this area on Monday in session S4. Nathanial Bowden (nbowden@sandia.gov) and his colleagues at Sandia National Laboratory propose to keep an eye on reactors and their stockpiles of plutonium by detecting elusive antineutrinos that fission reactions emit. The novel reactor safeguard tool is the subject of Bowden's talk in session B8. Finally, Edward Hartouni (hartouni1@llnl.gov) of Lawrence Livermore National Laboratory will discuss some of the short-comings in methods for detecting radioactive materials, biological threats, chemical weapons, and explosives and how they could be made more effective for ensuring national and international security (session C10).

Press Conference, Sunday, April 23, 12:30 PM

POUNDING PROTONS

The proton is composite---it's a sort of bag filled nominally with three quarks strung together by extra particles called gluons. Two nuclear physics experiments proceed to knock protons around in order to learn more about basic physics and about the early universe. In the HAPPEx-II experiment at the Jefferson Lab beams of electrons are used to probe the inner workings of the proton. Paul Souder, Syracuse University (I9.1 at the meeting, (souder@physics.syr.edu), and HAPPEx spokesperson Krishna Kumar of the University of Massachusetts, Amherst (kkumar@jlab.org) will report on new information about the role of the relatively rare strange quark in contributing to the proton's electric and magnetic properties. Meanwhile, the experiment at the Relativistic Heavy Ion Collider (RHIC), where not single protons but whole gold nuclei (with hundreds of protons and neutrons) are shattered, showed last year that the fireball resulting from the smashup behaved like a gigantic liquid of quarks and gluons. Barbara Jacak of SUNY Stony Brook (A1.2, jacak@skipper.physics.sunysb.edu) will report on a new assessment of the fluid dynamics and other properties of their quark liquid.

Press Conference, Sunday, April 23, 2 PM

SCIENTISTS IN TROUBLE: RUSSIA, IRAN, AND ELSEWHERE

The battle for protecting the human rights of scientists did not end with the Former Soviet Union--it is still going on today. APS Past President Andy Sessler (amsessler@lbl.gov), chair of session L6, will present a few illustrative cases of at-risk scholars who have been fully assisted and others still needing help. Human-rights activist and Cornell senior scientist Yuri Orlov (Yuri.Orlov@cornell.edu), one of the early defenders of Soviet physicist Andrei Sakharov and the first recipient of the new APS Sakharov Prize (to be given at session S6), will offer personal reflections. Hadi Hadizadeh (hadi@helios.phy.ohiou.edu), now at Ohio University, is an Iranian physicist who was sentenced to over 8 years of prison for advocating democracy and openness. Hadizadeh will describe the closed-door trials that he and fellow scholars experienced in Iran. Another talk will focus on the Scholars at Risk Network (SAR), an academic coalition now headquartered at New York University (http://scholarsatrisk.nyu.edu/). SAR director Robert Quinn (rquinn@nyu.edu), will explain the SAR's efforts to provide refuge for scientists persecuted in their home countries.

Press Conference, Monday, April 24, 11:30 AM

MAGNETAR SEISMOLOGY

Magnetars are neutron stars featuring colossal magnetic fields, as high as 10^15 gauss. These fields might be strong enough to crack the crusts of the stars and this could be the source of the huge energy bursts coming to Earth from these dynamic objects. One such event in 1998 and one in December 2004 are believed to have dispatched the largest batch of radiation to be detected from outside the solar system. Tod Strohmayer of NASA Goddard Space Flight Center (X3.2, stroh@milkyway.gsfc.nasa.gov) will show how the detailed trace of x-rays arriving from magnetars can be converted into seismic modes shaking the star and how properties of the star's crust can be deduced. He will present fresh analysis of the 1998 and 2004 events, including identification of additional vibrational modes.

Press Conference, Monday, April 24, 1:30 PM
ASTROPHYSICS IN THE LAB

Many of the complex phenomena we see in space are difficult to understand with existing theories. Part of the problem is that much of the matter in the universe is made of plasmas, which are collections of charged particles that can exhibit highly complex behavior, particularly when they interact with the magnetic fields of stars and galaxies. Increasingly, scientists are turning to lab-based experiments to gain insight into the mechanisms that affect plasmas in space. Michael Brown (doc@swarthmore.edu) of Swarthmore College has built arrays of wire loops to study magnetic reconnection in plasmas. In the case of our sun, magnetic reconnection leads to solar flairs that release energy and eject blasts of particles that can interfere with terrestrial communication and even knock out power grids. Paul Bellan (pbellan@its.caltech.edu) of Caltech, on the other hand, studies the astrophysical jets of plasma emitted by some galaxies by injecting gasses through nozzles into strong magnetic fields. Both Bellan and Brown are presenting their research in session L16. John Goree (john-goree@uiowa.edu) of the University of Illinois is interested in the dusty plasmas that fill interstellar space and make up the tails of comets and the rings of Saturn (S16). Because the dust in plasmas is much heavier than the ions and electrons of the plasmas themselves, the dusty plasmas behave very differently from the material that most stars are made of. Goree studies dusty plasmas in the lab by mixing micron-sized particles into normal plasmas, and directly video taping the particles as they mimic the behavior of dusty space plasmas

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