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August 5, 1985

UCSD TO HOST GLOBAL COSMIC RAY MEETING

The Center for Astrophysics and Space Sciences (CASS) at the University of California, San Diego will host more than 500 scientists from some 40 nations at the 19th biannual International Cosmic Ray Conference to be held on the La Jolla campus, August 11 - 23.

The conference has convened every two years since it began, in 1947 in Krakow, Poland, for the exchange of scientific findings on various aspects of cosmic ray astrophysics. Institutions in Europe, Asia and North America alternately host the meeting, which will be held in Moscow in 1987.

"There is a long tradition of international participation in cosmic ray research, as this is a very important branch of astrophysics and has strong links with other branches of physics," Dr. E. Margaret Burbidge, UCSD professor of physics and director of CASS, said.

"The biannual meeting provides a very useful forum for the presentation of new research results, the exchange of information on the progress of research around the world and the free exchange of ideas between scientists from countries on both sides of the Iron Curtain," she said.

Cosmic rays, for the most part, are highly energetic charged particles--protons, electrons and gamma-rays--from outer space that continually bombard the earth's atmosphere. A flood of less energetic cosmic rays are occasionally emitted by the sun as well.

The study of cosmic rays is extremely complex. While gamma-rays travel in straight lines, the course of protons, electrons and other charged particles can be deflected in outer space by magnetic fields, making it difficult for scientists to determine their source. What's more, collisions in space not only throw particles off course, but can change their character as well.

Hampered by this and countless other problems, scientists have been unable to fully solve the problem of the origin of cosmic rays. Theories abound, linking the particles to everything from exploding stars or supernovae to black holes at the center of quasars and other active galaxies to neutron stars at the heart of special types of pulsars.

"The object of our meetings is to find out where they're coming from and how they get here," said conference spokesman Richard Rothschild, research physicist at CASS.

In addition to the question of origin, the conference will focus on solar flares and other phenomena linked to the sun and acceleration of cosmic rays to the extremely high energies observed.

Two major talks will be given by members of UCSD's teaching and research faculty. Dr. Burbidge, a distinguished astrophysicist and leading authority on nuclear processes involved in stellar evolution and extragalactic objects such as quasars and radio galaxies, will speak on extragalactic astronomy.

Richard Lingenfelter, a research physicist in CASS who in 1982 presented the first compelling evidence for the existence of a massive black hole at the center of our galaxy, will address the conference on gamma-ray line astrophysics.

Other invited talks will be given by Catherine J. Cesarsky, Center for Nuclear Studies, Suclay, France; C. de Jager, Laboratory for Space Research, The Netherlands; Alex Szalay, Eotvos University, Hungary; Martin Rees, Institute of Astronomy at the University of Cambridge, England, and Grant M. Raisbeck, Laboratoire Rene Bernas, France.

The conference is held under the auspices of the International Union of Pure and Applied Physics, based in Stockholm, Sweden. Frank McDonald, chief scientist of the National Aeronautics and Space Administration (NASA), is chair of the steering committee. Martin Israel, an astrophysicist at Washington University at St. Louis, is chair of the general organizing committee. The La Jolla organizing committee is headed by Laurence Peterson, UCSD professor of physics.

Major industry funding for the conference was provided by Ball Corporation, Boulder, Colorado; Lockheed Missiles and Space Division, Palo Alto; TRW, and Rockwell International. Additional support came from NASA, the National Science Foundation, the Department of Energy, the Geophysics Research Laboratory of the U.S. Air Force, UCSD's Center for Astrophysics and Space Sciences and the California Space Institute.

(August 5, 1985) For more information contact: Susan Pollock, Public Information Office, 452-3120 Karen Delaney, Cosmic Ray Conference Coordinator, 452-4909