



**Aerospace and Electronic Systems / Technology Management Chapter  
of the IEEE NJ Coast Section**

**Co-Sponsors: IEEE NJ Coast Women in Engineering (WIE) and  
School of Science, Software Engineering Monmouth University**

## **The Big Bang and the Search for a Theory of Everything**

***Presented by NASA Astrophysics Science Division Goddard Space Flight Center  
Dr. Alan Kogut, Astrophysicist***

**Friday, August 6, 2010 at 6:00 PM**

**Technical Talk at BEY HALL, Young Auditorium Monmouth University**

Presentation for Professionals, Technical, Military, Students, Professors and the Public

**Registration at:** <http://ewh.ieee.org/r1/njcoast/>

**Select: Register** and if you need, enter **Directions to Location**.

**Please let us know by registering that you can attend. Bring colleagues and friends.**

Dr. Alan Kogut will arrive by 4pm and will be delighted to assist advanced HS and University students interested in space science research and jobs seekers for positions available at the Goddard Space Fly Center

### **Abstract**

How did the universe begin? Is the gravitational physics that governs the shape and evolution of the cosmos connected in a fundamental way to the sub-atomic physics of particle colliders? Light from the Big Bang still permeates the universe and carries within it faint clues to the physics at the start of space and time. I will describe how current and planned measurements of the cosmic microwave background will observe the Big Bang to provide new insight into a "Theory of Everything" uniting the physics of the very large with the physics of the very small.

### **About the Speaker**



Dr. Alan Kogut has spent the last twenty years studying the early universe through measurements of the cosmic microwave background. He has built instruments to observe from mountain tops, the South Pole, high-altitude balloons, and deep space. He is currently leading a team at NASA's Goddard Space Flight Center to search for the signature of quantum gravity waves originating from the Big Bang.

Enquires about this presentation can be sent to: Allen Milewski at [amilewsk@monmouth.edu](mailto:amilewsk@monmouth.edu),  
Paula Muller at [paula.muller@ieee.org](mailto:paula.muller@ieee.org), or Luis A Riesco at [luc@cybercomm.net](mailto:luc@cybercomm.net) **More Info**

## The Big Bang and the Search for a Theory of Everything

“The team led by Alan Kogut of NASA's Goddard Space Flight Center in Greenbelt, Md., has announced the discovery of cosmic radio noise that booms six times louder than expected. Many objects in the universe emit radio waves. In 1931, American Bell Labs physicist, Karl Jansky first detected radio static from our own Milky Way galaxy. Similar emission from other galaxies creates a background hiss of radio noise.” Are there more galaxies to be found?

“ARCADE's mission was to search the sky for heat from the first generation of stars. **Instead, it found a cosmic puzzle. Cosmic Radio Mystery!”**



ARCADE launches on its July 2006 discovery flight from NASA's Columbia Scientific Balloon Facility in Palestine, Texas. The balloon lofted the instrument to its observation altitude of 120,000 feet. Credit: NASA/ARCADE by [Staff Writers Greenbelt MD \(SPX\) Jan 12, 2009](#)

Dr. Alan Kogut will arrive early to talk and assist advanced HS and University students interested in space science research and jobs at the Goddard Space Fly Center. Also he will show how to find and apply for these positions.

Job Seekers are also welcome. **There is a need in Science and Technology students and jobs to reduce unemployment. An early employment relationship is a good way to secure a job after graduation in your field of interest.**