



MIT Lincoln Laboratory Seminar Series at Northeastern University 2008



Northeastern
UNIVERSITY

"To promote strong collaboration and inspire new ideas"

8 January
3:00 PM

Dana Research Center 442
100 Forsyth Street

Discovering Near-Earth Asteroids at Lincoln Laboratory

Abstract

The Lincoln Near-Earth Asteroid Research (LINEAR) program has discovered more than half of all Near-Earth Asteroids (NEAs) ever discovered. Since beginning full-time operations in 1998, it has provided 60% of the worldwide discoveries of new NEAs from its site near Socorro, New Mexico. On top of its success in discovering NEAs, LINEAR has become the leading ground-based discoverer of comets, with more than one hundred and fifty comets now named "LINEAR." LINEAR discovers many comets when they are far away from the Sun on their inbound trajectory, thus allowing observation of the heating process missed when comets are discovered closer to the Sun. LINEAR now operates two wide-area search telescopes with 1-meter apertures, and has recently added a 31-inch aperture telescope dedicated to automated follow-up of possible NEAs detected by the search telescopes. The LINEAR program originated as a new application of technology developed by Lincoln Laboratory to provide the United States Air Force with enhanced capability to track spacecraft. This successful technology migration has resulted in an improved understanding of the NEAs with LINEAR data providing the basis for the best analyses of the asteroid impact risk to the Earth. This talk provides an overview of the LINEAR program including recent enhancements to the LINEAR system, the productivity of the program, the scientific results gleaned from LINEAR data, and descriptions of some of the more interesting objects discovered.



**Dr. J. Scott
Stuart**

**Space Control
Systems
Group**

About the Speaker

Joseph Scott Stuart oversees the Lincoln Near-Earth Asteroid Research (LINEAR) program at MIT Lincoln Laboratory. He joined Lincoln Laboratory in 1993 after completing a BSE degree in computer science and engineering at the University of Pennsylvania. As a programmer, he helped start the LINEAR program in 1997 and 1998. In 1999, he entered the Ph.D. program in the Department of Earth, Atmospheric, and Planetary Sciences at MIT with funding from Lincoln Laboratory's Lincoln Scholars Program. His dissertation work, supervised by Professor Richard P. Binzel, used LINEAR survey data, combined with asteroid taxonomy and albedo data, to estimate properties of the near-Earth asteroid population including the size distribution, albedo distribution, and impact hazard to the Earth.

30 October



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Weber**

Weather Sensing
Group

13 November



**Dr. Steve
Spector**

Submicrometer
Technology Group

4 December



**Dr. Brian
Aull**

Advanced Imaging
Technology
Group

11 December



**Dr. Nancy
List**

Advanced Satcom
Systems and Operations
Group

18 December



**Dr. Jeff
Wysocarski**

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Group

15 January



**Lawrence
Bush**

Intelligence and
Decision Technologies
Group

22 January



**Dr. Todd
Rider**

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Molecular Technologies
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