Looking for Earths: The Race to Find New Solar Systems

Speaker: Alan Boss

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McMaster University • Hamilton, Ontario
Chester New Hall, Room 104

The search for planets outside our Solar System has a long and dismal history. However, all that changed in 1995, when we entered the era of the discovery of extrasolar planetary systems. To date, over 100 planets have now been found outside our Solar System, ranging from the fairly familiar to the weirdly unexpected. All of the new planets discovered to date appear to be gas giant planets, similar to our Jupiter and Saturn. The next challenge is to find ice giant planets, similar to Uranus and Neptune, and eventually to find evidence of Earth-like planets, capable of supporting life. NASA has designed an array of ground and space-based telescopes that will carry out this incredible search in the next two decades.

Alan Boss is a research staff member at the Carnegie Institution's Department of Terrestrial Magnetism in Washington, DC. He is a member of the American Academy of Arts and Sciences, and a Fellow of the American Association for the Advancement of Science, the Meteoritical Society, and the American Geophysical Union. He is chair of the International Astronomical Union's Working Group on Extrasolar Planets, charged with maintaining the IAU's official list of planets. His research focuses on using three dimensional hydrodynamics codes to model the formation of stars and planetary systems. He has been helping NASA plan its search for extrasolar planets ever since 1988, continues to be active in helping to guide NASA's efforts, and has written a popular book about the search.