

News from AAS Newsletter 90 - June 1998

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The 1998 DDA Meeting

The Division on Dynamical Astronomy held its 29th regular meeting on 1-3 April 1998 at the University of Virginia, Charlottesville, Virginia. Phil Ianna was the local host. The weather was good and the dogwood blossoms were at their peak. Participants presented a total of 42 talks (invited and contributed) and 8 poster papers.

Starting off the meeting was a special session honoring Martin Schwarzschild. This began with an invited talk by Tim de Zeeuw (Leiden) on "The Schwarzschild Method for Building Galaxy Models" and was followed by a number of contributed papers on this subject. After the coffee break in this session, Peter Teuben gave an invited talk on "Dynamical Modeling and Barred Galaxies." The afternoon session on 1 April was devoted to Space Astrometry. It was led off by an invited talk by Francois Mignard on "The Hipparcos Catalog: Realization, Content, and Scientific Applications." The session after the coffee break was devoted to cosmology.

Brouwer Award Recipient for 1998, Scott Tremaine (Princeton), presented the Brouwer Award Lecture at the start of the 2 April morning session. His talk was entitled "Resonant Relaxation." This was followed by a session on extrasolar planets and then by one on theoretical dynamics. The afternoon session was devoted to close approaches of objects to Earth. Local television crews came in to tape Paul Chodas speaking on the close approach of 1997 XF 1 to Earth in 2028. After the business meeting there was a poster session with refreshments.

The DDA banquet was held in the Rotunda, the domed building designed by Thomas Jefferson as part of the original campus of the University of Virginia. It is said that Jefferson would supervise progress on the building by observing it with a telescope from his home at Monticello, which is in the hills overlooking the University. The banquet speaker was Don Osterbrock, who spoke on the need for astronomers to become involved in the history of astronomy in a talk entitled, "The View from the Observatory: History is too Important to be left to the Historians." He also reminisced on growing up in Cincinnati and the great influence that Paul Herget had on his early professional development.

Jon D. Giorgini began the morning session of 3 April with an invited talk entitled "True Airspeed: Spacecraft Aerobraking Orbit Determination and Dynamics at Venus and Mars." The talk began with a review of the Magellan project at Venus where the braking sessions were so stressful that the team manager suffered a heart attack during one of them. It ended with the prognosis for the Mars Orbiter braking. The remainder of the morning was devoted to papers on artificial satellites and on asteroids.

The afternoon session was started by an invited paper by Otto Franz entitled, "Binary Star Research with the HST Fine Guidance Sensors," which was followed by contributed papers on binaries and on natural satellites. This session included a paper on the recently discovered satellites of Neptune.

DDA Student Stipend Program

To increase student participation at DDA meetings, the Division makes available up to two student stipends of \$400 each. Any full or part-time student presently enrolled in an academic program at a college or university is eligible. For next year's April 1999 meeting, submit an abstract of a paper for presentation, along with a letter of recommendation from an advisor, to: Dr. Carol Williams, University of South Florida, Mathematics Dept., Physics 114, 4202 E. Fowler Ave., Tampa, FL 33620-5700, email: cw@math.usf.edu [1]

At this year's meeting, two student stipends were awarded: Elena Grocheva (Pulkovo Observatory)

spoke on "Applications of Probability Theory to the Identification and Analysis of Binary Star Systems," and Jounghun Lee (U. Kansas) spoke on "The Cosmological Mass Distribution Function in the Zel'dovich Approximation."

Aarseth Wins the 1999 Brouwer Award

The DDA announced Sverre Aarseth (Institute of Astronomy, University of Cambridge) as the recipient of the 1999 Dirk Brouwer Award. Aarseth has almost single-handedly pioneered and pursued the development of N-body simulations as a powerful and reliable tool for studying the dynamics of stellar systems. He has not only set the standards, but also the tone, in this entire field for well over 30 years now.

Aarseth developed a unique set of N-body codes that make it possible to study gravitational systems where encounters and collisions are important. He pioneered the use of regularization methods, and continues to adapt his codes to improving computer technology (e.g., the special purpose GRAPE system). Aarseth freely distributes and supports his codes, and he has worked particularly hard to make them available in third world countries. They have become the industry standard. In particular his NBODY5 has no rivals.

Aarseth has used these codes to make seminal contributions to a wide range of dynamical problems. He discovered that encounters in globular clusters inevitably lead to the formation of binaries, which play a decisive role in the evolution of these systems. With James Binney, he showed that collapse from aspherical initial conditions naturally leads to triaxial equilibrium configurations, a discovery that transformed the field of dynamics of elliptical galaxies in the late seventies. He studied prototertrestrial planetary evolution, and was the first to simulate the development of large-scale structure in the Universe through gravitational instability. Other applications include the dynamics of open clusters and of merging galaxies.

Aarseth's work is a unique and important contribution to the entire field of dynamical astronomy. It has become an indispensable part of astronomy and astrophysics, and Aarseth himself remains a major influence. His willingness to share, his integrity, his precision, and his persistent enthusiasm to modify his codes to accommodate the research needs of others have influenced an entire generation of dynamicists. We, as a community, owe him much.

The DDA on the Web

The DDA has a homepage on the Web, where all the latest news and information is posted. The URL is <http://dda.harvard.edu> [2] (you can also get there through the AAS homepage at <http://www.aas.org> [3]).

The 1999 Meeting

The next DDA meeting will be held in Estes Park, Colorado during the second half of April. The local host will be Hal Levison, Southwest Research Institute, Boulder. The Program Committee will consist of Stan Peale (Vice Chair), Hal Levison, and Marc Murison (Secretary). The year 2000 meeting is planned for Yosemite National Park.

Photos in the following article by Alan Fiala —

The 29th Annual Meeting of the DDA surrounded by cherry blossoms and great architecture. The meeting had a notable international flavor, with attendees from half a dozen nations. Photo, B. Seidelmann, Courtesy, Marc Murison: Scott Tremaine (right) receives the Brouwer Award certificate from DDA Chair Jack Hills.

Local host, Phil Ianna (left), chats with Program Chair, Fritz Benedict, under a canopy of cherry blossoms.

Don Osterbock (right), the Banquet speaker, chats with Larry Frederick.

Galaxy modelers, Tim de Zeeuw (left) and Peter Teuben were invited speakers for a session honoring Martin Schwarzschild.

Francois Mignard spoke on the Hipparcos Catalog.

Jon Giorgini was invited to speak on spacecraft

Last years local host, Otto Franz, was invited to speak on binary star research.

Elena Grocheva (Pulkovo Observatory) receives a student stipend award from Chair Jack Hills for her paper on probability theory and the study of binary stars.

The "ties" have it! The DDA banquet always brings out the astronomical ties: (from the left) Fritz Benedict, Paul Janiczek, Alan Fiala, Jack Hills, Tim de Zeeuw, Brent Archinal and Roy Laubscher. Photo, Jack Lissauer, courtesy Alan Fiala.

Paul Janiczek and Alice Monet compare notes on the USNO stations.

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