The Mystery of Dark Matter

“...imaginative, artistic and scientifically valid. I highly recommend it to high school teachers.”

- Vera Rubin

Vera Rubin
Astronomer, Department of Terrestrial Magnetism
Carnegie Institution of Washington
Discoverer of Dark Matter in individual galaxies.

About The Mystery of Dark Matter

Over the last few decades, physicists discovered that around ninety percent of every galaxy in the universe is made of an unseen substance called ‘dark matter’. This module, tied to physics curricula, explores how dark matter was discovered, why it remains a mystery, and how finding out what it is made of is currently one of the hottest topics in science.

Over 100 international teachers and researchers contributed to the module, which has been classroom tested with over 1000 students. The full kit provides educators with flexibility and choice. Teachers are encouraged to choose those elements that best suit their needs and modify the worksheets as they see fit (using editable electronic copies found on the DVD).

The full kit includes

- DVD – With state of the art animation and indexed chapters to stop/start as required
- Suggested Ways to Use the Module – Possible lesson outlines
- Curriculum Links – Commonly taught topics related to dark matter
- Dark Matter in a Nutshell – Summary of the video
- Student Activities – Hands-on demonstrations and student worksheets
- Supplementary Information – More details and mathematical appendices
- Dark Side of the Universe – Introductory article about dark matter

About Perimeter Institute

Canada’s Perimeter Institute for Theoretical Physics is an independent non-profit, scientific research and educational outreach organization where international scientists cluster to push the limits of our understanding of physical laws and calculate new ideas about the very essence of space, time, matter and information. The award-winning research centre provides a multidisciplinary environment to foster research in areas of Cosmology, Particle Physics, Quantum Foundations, Quantum Gravity, Quantum Information and Superstring Theory. The Institute, located in Waterloo, Ontario, also provides a wide array of educational outreach activities for students, teachers and members of the general public across the country and beyond in order to share the joy of scientific research, discovery and innovation.

Learn more at the special AAAS workshop
Teaching Physics to High School Students
New Perimeter Explorations Classroom Video

with

Damian Pope Senior Manager of Scientific Outreach, PI
Max Tegmark Associate Professor of Physics, MIT
John Matlock Director of External Relations and Outreach, PI

Saturday, February 16th
10:30 to 11:30 am
Hynes Convention Centre
Third Level, Room 303
Canada's Perimeter Institute for Theoretical Physics (PI) is creating classroom resources designed to help teachers introduce and guide students through a variety of topics in physics. The lessons, known as Perimeter Explorations, are the product of collaborations between Perimeter Institute's international researchers, outreach staff, and experienced teachers.

The first installment, The Mystery of Dark Matter (see reverse side), has been designed with both the expert and novice teacher in mind. The full kit, which is free to educators, includes:

- 25 minute DVD with indexed chapters to stop/start as needed
- Teacher's Guide with supplementary materials including hands-on demonstrations
- Student Worksheets, including electronic versions to edit and tailor for individual classes

This new resource fulfills the number one request from the hundreds of educators who attend the Institute’s popular 'EinsteinPlus Workshops on Modern Physics' – to receive PI's lessons in a turn-key format that teachers can use in-class and:

- Present content related to curricula worldwide that is also at the cutting edge of scientific knowledge
- Challenge students with deep concepts, abstract ideas and formulas in highly visual ways
- Engage students with real researchers who demonstrate passion for their work

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