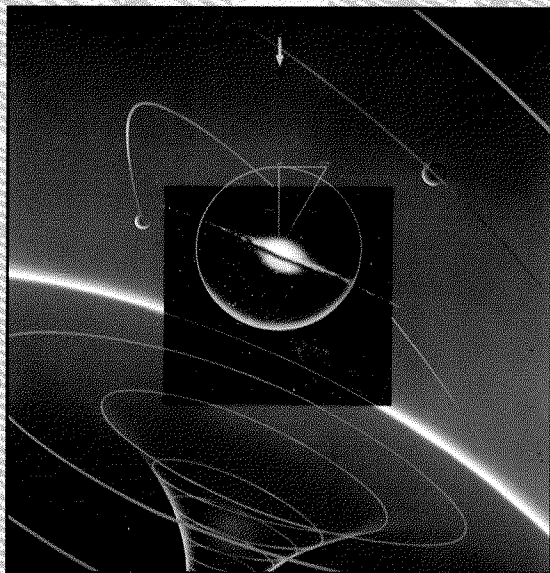


The Mechanical Universe...and Beyond



Part I • Programs 1–26

Discs 1–6

 **Annenberg/CPB**

The Mechanical Universe...and Beyond

Part I • Programs 1–26

A visually splendid introductory physics course, *The Mechanical Universe...and Beyond* combines computer graphics and dramatic reenactments of the history of science with introductory lectures by Caltech's David L. Goodstein. This in-depth adventure of the mind traces the interaction of ideas from Aristotle to Einstein to explain the theories of Copernicus, Kepler, and Newton. The programs clearly explain and illustrate classical mechanics and modern physics.

Produced by the California Institute of Technology and the Southern California Consortium.

Part I

1. Introduction
2. The Law of Falling Bodies
3. Derivatives
4. Inertia
5. Vectors
6. Newton's Laws
7. Integration
8. The Apple and the Moon
9. Moving in Circles
10. Fundamental Forces
11. Gravity, Electricity, Magnetism
12. The Millikan Experiment
13. Conservation of Energy
14. Potential Energy
15. Conservation of Momentum
16. Harmonic Motion
17. Resonance
18. Waves
19. Angular Momentum
20. Torques and Gyroscopes
21. Kepler's Three Laws
22. The Kepler Problem
23. Energy and Eccentricity
24. Navigating in Space
25. Kepler to Einstein
26. Harmony of the Spheres

See discs for sequencing. **Part II, programs 27–52, are on discs 7–12.**

To order other series
and related books,
call **1-800-LEARNER**
or visit **www.learner.org**



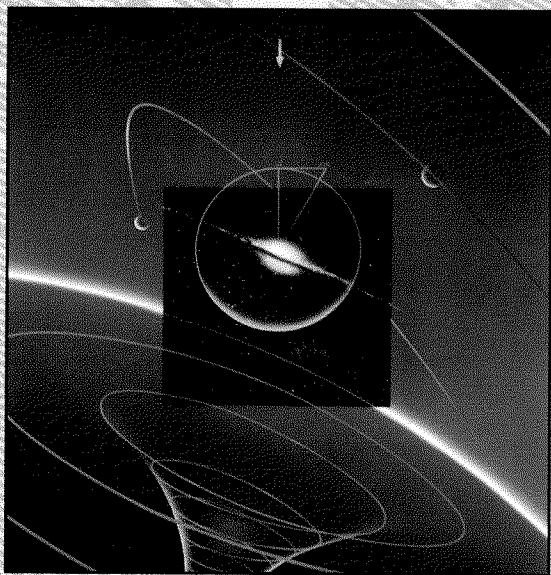
 **Annenberg/CPB**

P.O. Box 2345
S. Burlington, VT 05407-2345

ISBN 1-57680-686-3

This DVD may only be played for nontheatrical educational use in the U.S. on DVD players and over college, library, and school closed circuit systems without further permission. Any unauthorized use is an infringement of copyright and is prohibited. For information about home video rights, cable rights, or use outside the U.S., call 1-800-LEARNER or fax (802) 846-1850.

The Mechanical Universe...and Beyond



Part II • Programs 27–52

Discs 7–12

 **Annenberg/CPB**

The Mechanical Universe...and Beyond

Part II • Programs 27–52

A visually splendid introductory physics course, *The Mechanical Universe...and Beyond* combines computer graphics and dramatic reenactments of the history of science with introductory lectures by Caltech's David L. Goodstein. This in-depth adventure of the mind traces the interaction of ideas from Aristotle to Einstein to explain the theories of Copernicus, Kepler, and Newton. The programs clearly explain and illustrate classical mechanics and modern physics.

Produced by the California Institute of Technology and the Southern California Consortium.

Part II

- 27. Beyond the Mechanical Universe
- 28. Static Electricity
- 29. The Electric Field
- 30. Potential and Capacitance
- 31. Voltage, Energy, and Force
- 32. The Electric Battery
- 33. Electric Circuits
- 34. Magnetism
- 35. The Magnetic Field
- 36. Vector Fields and Hydrodynamics
- 37. Electromagnetic Induction
- 38. Alternating Current
- 39. Maxwell's Equations
- 40. Optics
- 41. The Michelson-Morley Experiment
- 42. The Lorentz Transformation
- 43. Velocity and Time
- 44. Mass, Momentum, Energy
- 45. Temperature and Gas Laws
- 46. Engine of Nature
- 47. Entropy
- 48. Low Temperatures
- 49. The Atom
- 50. Particles and Waves
- 51. From Atoms to Quarks
- 52. The Quantum Mechanical Universe

See discs for sequencing. **Part I, programs 1–26, are on discs 1–6.**

To order other series
and related books,
call **1-800-LEARNER**
or visit www.learner.org



 **Annenberg/CPB**

P.O. Box 2345
S. Burlington, VT 05407-2345

ISBN 1-57680-693-6

This DVD may only be played for nontheatrical educational use in the U.S. on DVD players and over college, library, and school closed circuit systems without further permission. Any unauthorized use is an infringement of copyright and is prohibited. For information about home video rights, cable rights, or use outside the U.S., call 1-800-LEARNER or fax (802) 846-1850.