

Florida Institute of Technology– Career Management Services

Career Profile: Physics and Space Sciences

Physicists and Space Scientist conduct research to understand the nature of the universe and everything in it. These scientists observe, measure, interpret, and develop theories to explain celestial and physical phenomena using mathematics. From the vastness of space to the infinitesimal scale of subatomic particles, they study the fundamental properties of the natural world and apply the knowledge gained to design new technologies.

Physicists explore and identify basic principles and laws governing the motion, energy, structure, and interactions of matter. Some physicists study theoretical areas, such as the nature of time and the origin of the universe; others apply their knowledge of physics to practical areas, such as the development of advanced materials, electronic and optical devices, and medical equipment.

Physicists design and perform experiments with sophisticated equipment such as lasers, particle accelerators, electron microscopes, and mass spectrometers. On the basis of their observations and analysis, the attempt to discover and explain laws describing forces of nature, such as gravity, electromagnetism, and nuclear interactions. Experiments also help physicists find ways to apply physical laws and theories to problems in nuclear energy, electronics, optics, materials, communications, aerospace technology, and medical instrumentation.

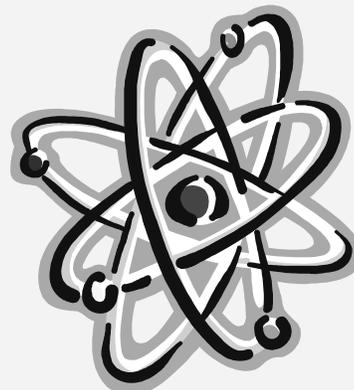
Space Scientists use the principles of physics and mathematics to learn about the fundamental nature of the universe and its components, including the sun, moon, planets, stars, and galaxies. As such, astronomy is sometimes considered a subfield of physics. They also apply their knowledge to solve problems in navigation, space flight, and satellite communications and to develop the instrumentation and techniques used to observe and collect astronomical data.

Some physicists temporarily work away from home at national or international facilities with unique equipment, such as particle accelerators. Astronomers who make observations with ground-based telescopes may spend many hours working in observatories; this work usually involves travel to remote locations and may require working at night. Physicists and astronomers whose work depends on grant money often are under pressure to write grant proposals to keep their work funded.

Because most jobs are in basic research and development, a doctoral degree is the usual educational requirement for physicists and astronomers. Master's degree holders qualify for some jobs in applied research and development, whereas bachelor's degree holders often qualify as research assistants or for jobs in other fields where a physics background is good preparation, such as engineering and technology

The median annual wage of physicists was \$106,370 in May 2010. The median wage is the wage at which half the workers in an occupation earned more than that amount and half earned less. The lowest 10 percent earned less than \$58,850, and the top 10 percent earned at least \$166,400.

The median annual wage for astronomers was \$87,260 in May 2010. The lowest 10 percent earned less than \$48,710, and the top 10 percent earned more than \$155,480



For more information on a career in Physics and Space Sciences contact the Career Management Services Office or your academic advisor.

Sources: Bureau of Labor Statistics, U.S. Department of Labor, Occupational Outlook Handbook, 2012-13 Edition
National Association of Colleges and Employers Salary Survey: Winter 2011



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