National Aeronautics and Space Administration

Educational Product	
Educators & Students	Grades 5-12

ET-2004-10-100-ARC

Educational Topic

Astrophysicist

Related Job Titles:

Space Scientist, Astronomer, Research Scientist, Physicist, Planetary Scientist, Space Physicist, Dynamicist, Planetary Spectroscopist, Galactic Astronomer, Stellar Spectroscopist

Job Description:

Astrophysicists study objects in the universe, including galaxies and stars to understand what they are made of, their surface features, their histories and how they were formed. To study these bodies, Astrophysicists often come up with new tools and ways to investigate them. Astrophysicists spend most of their time in laboratories and offices looking at a lot of information gathered by instruments such as telescopes, sensors and probes. They decide what the information means and write papers and reports about what they find. Some also spend time discovering rules about how objects in space are formed or structured. A small portion of an Astrophysicist's time is spent actually making observations with instruments. This may require travel to faraway locations.

Interests / Abilities:

- Do you enjoy math and science?
- Do you have a good imagination?
- Do you work well on your own?
- Do you enjoy working with computers?
- Do you enjoy solving mysteries or problems?
- Do you enjoy learning about new things?
- Do you do well in math and science?

Suggested School Subjects / Courses:

- Physics
- Chemistry
- Astronomy
- Electronics
- Mathematics

Education / Training Needed:

The minimum education required for this position is a bachelor's degree in Physics, Mathematics, Astrophysics, Astronomy, or a related subject from an accredited college or university. This study must include one physics or engineering lab in aerospace instrumentation. To do research, a Ph.D. is highly desired for this position.

Areas of expertise:

- *Solar studies:* study the Sun
- *Stellar studies:* study the Sun and other stars.
- *Planetary studies:* study planets, moons, asteroids, meteoroids and comets
- *Optical physics:* design and develop instruments that measure radiation
- *Atmospheres and ionospheres:* study atmospheres on Earth, other planets and moons.
- *Fields and particles:* study magnetic, gravitational and electric fields in space

Additional Resources:

- American Institute of Physics
  http://www.aip.org
- American Astronomical Society
  (request a pamphlet with information on careers in astronomy)
  http://www.aas.org
- Astrobiology Summer Academy
  http://academy.arc.nasa.gov/
- Astronomical Society of the Pacific
  http://www.aspsky.org
- Graduate Student Researchers Program
  http://spacelink.nasa.gov/Instructional.Materials/NASA.Educational.Products/Graduate.Student.Researchers.Program.Brochure/.index.html
- MATHCOUNTS Competition
  http://mathcounts.org/
- Minority University Research and Education Programs
  http://mured.nasaprs.com/
- NASA Cooperative Education Program for college students
  http://spacelink.nasa.gov/Educational.Services/NASA.Education.Programs/Student.Support/NASA.Cooperative.Education.Program/.index.html
- NASA Jobs
  http://nasajobs.nasa.gov/
- NASA SHARP Internship Program for high-schoolers
  http://www.mtsibase.com/sharp/
- NASA Student Employment
  http://nasajobs.nasa.gov/stud_opps/employment/index.htm
- NASA Student Involvement Program student contests
  http://www.nsip.net/index.cfm
- SETI Institute Online (Search for Extraterrestrial Intelligence)
  http://www.seti.org

What can I do right now?

- Visit a planetarium or observatory near you.
- Call the American Association of Science and Technology Centers for information on science museums in your area that you can visit (202) 783-7200.
- Join an astronomy club.
- Buy an inexpensive telescope and study the stars from home.
- Read *Astronomy* and *Sky and Telescope* magazines.
- Ask your teacher to sign up for project ASTRO, a program where astronomers visit your classroom.
- Attend U.S. Space Camp for a week-long program on astronomy and space sciences.

- Student's Guide to Astrobiology
  http://www.astrobiology.com/student.html
- Tech-Interns.com
  http://www.tech-interns.com/
- The American Physical Society
  http://www.aps.org
- The Planetary Society
  http://www.planetary.org
- Yvonne Pendleton's Astronomy Web site for students
  (Yvonne is a NASA astrophysicist)
  http://web99.arc.nasa.gov/~yvonne

Please take a moment to evaluate this product at:
http://ehb2.gsfc.nasa.gov/edcats/educational_topic

Your evaluation and suggestions are vital to continually improving NASA educational materials.
Thank you.

http://quest.nasa.gov/people/index.html

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