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First the short form, authored by Henry Spencer, then an official NASA announcement.

Q. How do I become an astronaut?

A. We will assume you mean a NASA astronaut, since it's probably impossible for a non-Russian to get into the cosmonaut corps (paying passengers are not professional cosmonauts), and the other nations have so few astronauts (and fly even fewer) that you're better off hoping to win a lottery. Becoming a shuttle pilot requires lots of fast-jet experience, which means a military flying career; forget that unless you want to do it anyway. So you want to become a shuttle "mission specialist".

If you aren't a US citizen, become one; that is a must. After that, the crucial thing to remember is that the demand for such jobs vastly exceeds the supply. NASA's problem is not finding qualified people, but thinning the lineup down to manageable length.It is not enough to be qualified; you must avoid being *dis*qualified for any reason, many of them in principle quite irrelevant to the job.

Get a Ph.D. Specialize in something that involves getting your hands dirty with equipment, not just paper and pencil. Forget computer programming entirely; it will be done from the ground for the fore-seeable future. Degree(s) in one field plus work experience in another seems to be a frequent winner.

Be in good physical condition, with good eyesight.(DO NOT get a radial keratomy or similar hack to improve your vision; nobody knows

what sudden pressure changes would do to RKed eyes, and long-term effects are poorly understood. For that matter, avoid any other significant medical unknowns.) If you can pass a jet-pilot physical, you should be okay; if you can't, your chances are poor.

Practise public speaking, and be conservative and conformist in appearance and actions; you've got a tough selling job ahead, trying to convince a cautious, conservative selection committee that you are better than hundreds of other applicants. (And, also, that you will be a credit to NASA after you are hired: public relations is a significant part of the job, and NASA's image is very prim and proper.) The image you want is squeaky-clean workaholic yuppie.

Remember also that you will need a security clearance at some point, and Security considers everybody guilty until proven innocent.

Keep your nose clean.

Get a pilot's license and make flying your number one hobby; experienced pilots are known to be favored even for non-pilot jobs.

Work for NASA; of 45 astronauts selected between 1984 and 1988, 43 were military or NASA employees, and the remaining two were a NASA consultant and Mae Jemison (the first black female astronaut).

If you apply from outside NASA and miss, but they offer you a job at NASA, ***TAKE IT***; sometimes in the past this has meant "you do look interesting but we want to know you a bit better first".

Think space: they want highly motivated people, so lose no chance to demonstrate motivation.

Keep trying. Many astronauts didn't make it the first time.

National Aeronautics and Space Administration

Lyndon B. Johnson Space Center

Houston, Texas

Announcement for Mission Specialist and Pilot Astronaut Candidates

Astronaut Candidate Program

The National Aeronautics and Space Administration (NASA) has a need for Pilot Astronaut Candidates and Mission Specialist Astronaut Candidates to support the Space Shuttle Program. NASA is now accepting on a continuous basis and plans to select astronaut candidates as needed. Persons from both the civilian sector and the military services will be considered.

All positions are located at the Lyndon B. Johnson Space Center in Houston, Texas, and will involved a 1-year training and evaluation program.

Space Shuttle Program Description

The numerous successful flights of the Space Shuttle have demonstrated that operation and experimental investigations in space are becoming routine. The Space Shuttle Orbiter is launched into, and maneuvers in the Earth orbit performing missions lastling up to 30 days. It then returns to earth and is ready for another flight with payloads and flight crew.

The Orbiter performs a variety of orbital missions including deployment and retrieval of satellites, service of existing satellites, operation of specialized laboratories (astronomy, earth sciences, materials processing, manufacturing), and other operations. These missions will eventually include the development and servicing of a permanent space station. The Orbiter also provides a staging capability for using higher

orbits than can be achieved by the Orbiter itself. Users of the Space Shuttle's capabilities are both domestic and foreign and include government agencies and private industries.

The crew normally consists of five people - the commander, the pilot, and three mission specialists. On occasion additional crew members are assigned. The commander, pilot, and mission specialists are NASA astronauts.

Pilot Astronaut

Pilot astronauts server as both Space Shuttle commanders and pilots. During flight the commander has onboard responsibility for the vehicle, crew, mission success and safety in flight. The pilot assists the commander in controlling and operating the vehicle. In addition, the pilot may assist in the deployment and retrieval of satellites utilizing the remote manipulator system, in extra-vehicular activities, and other payload operations.

Mission Specialist Astronaut

Mission specialist astronauts, working with the commander and pilot, have overall responsibility for the coordination of Shuttle operations in the areas of crew activity planning, consumables usage, and experiment and payload operations. Mission specialists are required to have a detailed knowledge of Shuttle systems, as well as detailed knowledge of the operational characteristics, mission requirements and objectives, and supporting systems and equipment for each of the experiments to be conducted on their assigned missions. Mission specialists will perform extra-vehicular activities, payload handling using the remote manipulator system, and perform or assist in specific

experimental operations.

Astronaut Candidate Program

Basic Qualification Requirements

Applicants MUST meet the following minimum requirements prior to submitting an application.

Mission Specialist Astronaut Candidate:

1. Bachelor's degree from an accredited institution in engineering, biological science, physical science or mathematics. Degree must be followed by at least three years of related progressively responsible, professional experience. An advanced degree is desirable and may be substituted for part or all of the experience requirement (master's degree = 1 year, doctoral degree = 3 years). Quality of academic preparation is important.

2. Ability to pass a NASA class II space physical, which is similar to a civilian or military class II flight physical and includes the following specific standards:

Distant visual acuity:

20/150 or better uncorrected,

correctable to 20/20, each eye.

Blood pressure:

140/90 measured in sitting position.

3. Height between 58.5 and 76 inches.

Pilot Astronaut Candidate:

1. Bachelor's degree from an accredited institution in engineering, biological science, physical science or mathematics. Degree must be followed by at least three years of related progressively responsible,

professional experience. An advanced degree is desirable. Quality of academic preparation is important.

2. At least 1000 hours pilot-in-command time in jet aircraft. Flight test experience highly desirable.

3. Ability to pass a NASA Class I space physical which is similar to a military or civilian Class I flight physical and includes the following specific standards:

Distant visual acuity:

20/50 or better uncorrected

correctable to 20/20, each eye.

Blood pressure:

140/90 measured in sitting position.

4. Height between 64 and 76 inches.

Citizenship Requirements

Applications for the Astronaut Candidate Program must be citizens of the United States.

Note on Academic Requirements

Applicants for the Astronaut Candidate Program must meet the basic education requirements for NASA engineering and scientific positions -- specifically: successful completion of standard professional curriculum in an accredited college or university leading to at least a bachelor's degree with major study in an appropriate field of engineering, biological science, physical science, or mathematics.

The following degree fields, while related to engineering and the sciences, are not considered qualifying:

- Degrees in technology (Engineering Technology, Aviation Technology,

Medical Technology, etc.)

- Degrees in Psychology (except for Clinical Psychology, Physiological Psychology, or Experimental Psychology which are qualifying).

- Degrees in Nursing.

- Degrees in social sciences (Geography, Anthropology, Archaeology, etc.)

- Degrees in Aviation, Aviation Management or similar fields.

Application Procedures

Civilian

The application package may be obtained by writing to:

NASA Johnson Space Center

Astronaut Selection Office

Houston, TX 77058

Civilian applications will be accepted on a continuous basis. When NASA decides to select additional astronaut candidates, consideration will be given only to those applications on hand on the date of decision is made. Applications received after that date will be retained and considered for the next selection. Applicants will be notified annually of the opportunity to update their applications and to indicate continued interest in being considered for the program. Those applicants who do not update their applications annually will be dropped from consideration, and their applications will not be retained. After the preliminary screening of applications, additional information may be requested for some applicants, and person listed on the application as supervisors and references may be contacted.

Active Duty Military

Active duty military personnel must submit applications to their

respective military service and not directly to NASA. Application procedures will be disseminated by each service.

Selection

Personal interviews and thorough medical evaluations will be required for both civilian and military applicants under final consideration.

Once final selections have been made, all applicants who were considered will be notified of the outcome of the process.

Selection rosters established through this process may be used for the selection of additional candidates during a one year period following their establishment.

General Program Requirements

Selected applicants will be designated Astronaut Candidates and will be assigned to the Astronaut Office at the Johnson Space Center, Houston, Texas. The astronaut candidates will undergo a 1 year training and evaluation period during which time they will be assigned technical or scientific responsibilities allowing them to contribute substantially to ongoing programs. They will also participate in the basic astronaut training program which is designed to develop the knowledge and skills required for formal mission training upon selection for a flight. Pilot astronaut candidates will maintain proficiency in NASA aircraft during their candidate period.

Applicants should be aware that selection as an astronaut candidate does not insure selection as an astronaut. Final selection as an astronaut will depend on satisfactory completion of the 1 year training and evaluation period. Civilian candidates who successfully complete the training and evaluation and are selected as astronauts will become

permanent Federal employees and will be expected to remain with NASA for a period of at least five years. Civilian candidates who are not selected as astronauts may be placed in other positions within NASA depending upon Agency requirements and manpower constraints at that time. Successful military candidates will be detailed to NASA for a specified tour of duty.

NASA has an affirmative action program goal of having qualified minorities and women among those qualified as astronaut candidates. Therefore, qualified minorities and women are encouraged to apply.

Pay and Benefits

Civilians

Salaries for civilian astronaut candidates are based on the Federal Governments General Schedule pay scales for grades GS-11 through GS-14, and are set in accordance with each individuals academic achievements and experience.

Other benefits include vacation and sick leave, a retirement plan, and participation in group health and life insurance plans.

Military

Selected military personnel will be detailed to the Johnson Space Center but will remain in an active duty status for pay, benefits, leave, and other similar military matters.

NEXT: FAQ #15/15 - Orbital and Planetary Launch Services