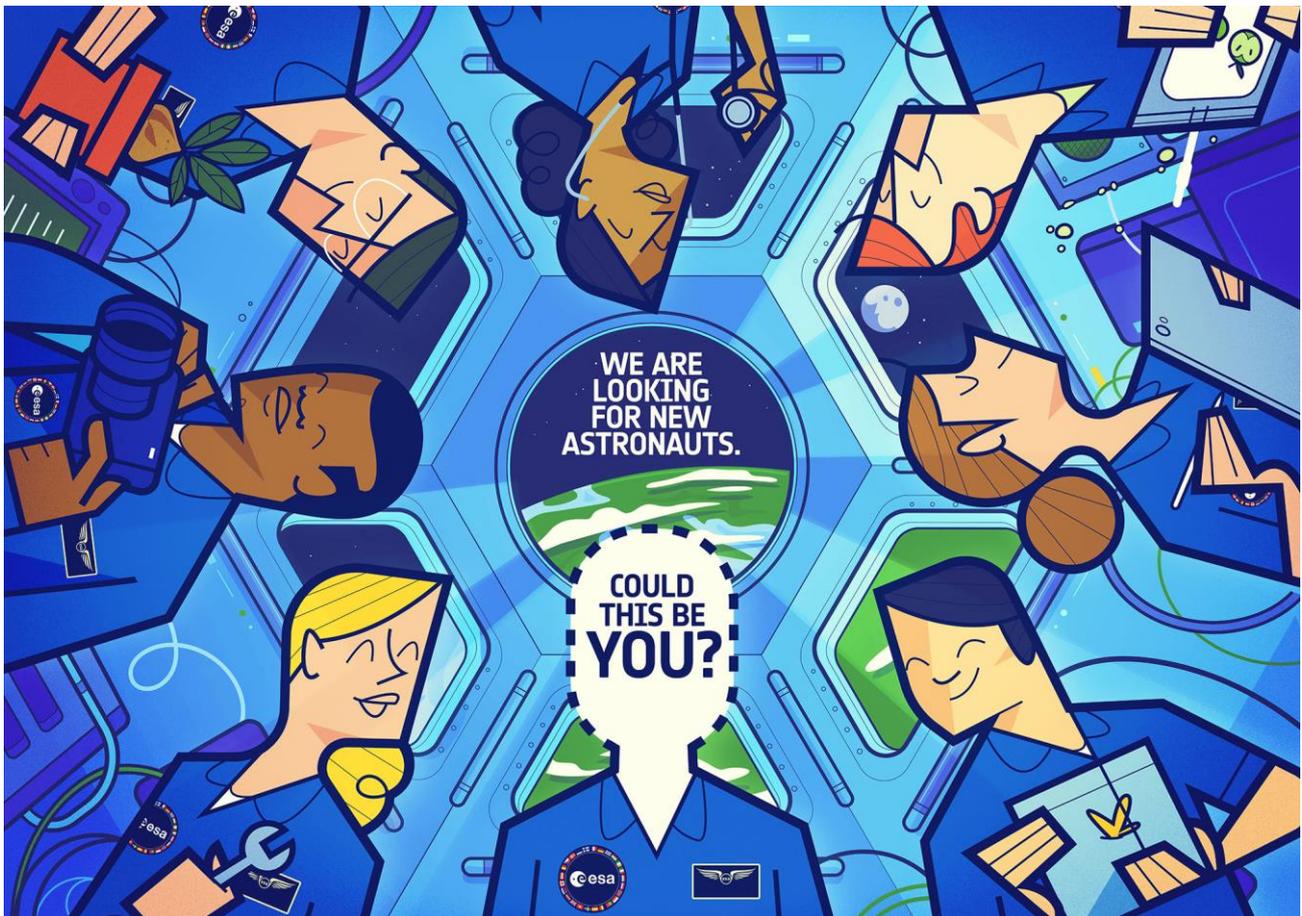


AstroSel2021

Q&A Master File



GENERAL ASTRONAUT FAQ

General Aspects

Our Mission

The mission of the European Space Agency (ESA) is the peaceful exploration and use of space for the benefit of everyone. We watch over the Earth, develop and launch inspiring and unique space projects, train Astronauts and push the boundaries of science and technology, seeking answers to the big science questions about the Universe. We are a community of scientists, engineers and business professionals from all over Europe working together in a diverse and multinational environment. We are dedicated to united space in Europe and united Europe in space.

Unique Chance to Apply

With its 22 Member States and 2 Associate Members, ESA is a truly transnational space agency. That means that nationals from these member states and associated member states can apply to the ESA Astronaut and Parastronaut vacancy notice.

This is an exciting and also a rare occasion as ESA has issued a call for Astronauts only three times since 1978, with the most recent time in 2008. A new opportunity has now risen, where ESA plans to recruit 4-6 new Astronauts through its 2021-22 selection process to join the Agency's future endeavours in space. This campaign will select Astronauts for Career Astronauts (Corps) or the newly created Reserve pool of Astronauts. Unlike Career Astronauts, Reserve Astronauts will not be permanent ESA staff, but have the opportunity to be selected for specific projects, as Project Astronauts. When not on a mission, these Astronauts will be on a consultancy contract with the Agency. Potentially there may also be the possibility to join as Career Astronauts.

Be inspired by our future challenges and space missions. Apply to be part of the Astronaut corps and join us in this exceptional endeavour and discover that, at ESA, Earth is just the beginning!

Job: European Astronaut

What is an Astronaut?

An Astronaut is a person trained to serve as a professional crew member or to command or pilot a spacecraft during a spaceflight and to perform duties related to space exploration. The definition of spaceflight varies. The Fédération Aéronautique Internationale, for example, defines spaceflight as any flight reaching 100 km altitude. Due to the challenges and hostility of life in space, Astronauts spend a large part of their career training.

Professional space travellers from Russia are known as cosmonauts. Chinese space travellers are sometimes referred to as taikonauts.

Being an ESA Astronaut

Starting in 1978 with the earliest Astronaut selection, ESA took its first steps into human spaceflight and that was just the beginning. In November 2019, ESA's Ministerial Council, Space 19+, discussed the future ambitions of Europe in space, and confirmed its commitment towards the human space flight programme.

Astronauts are highly skilled and trained personnel that participate in space missions, whether as commander or crewmembers. Representing all humankind, these space travellers test the limits of the human body in space, perform research, support the development of new technologies, and explore the wonders of the universe in one of the most extreme environments

Is there a centre in Europe for training European Astronauts?

Yes. ESA's European Astronaut Centre (EAC) is located in Cologne, Germany. This is the home base for European Astronauts and where all partner Astronauts who fly to the International Space Station are trained in operation of the European Columbus laboratory. It is also where European Astronaut candidates undertake their basic training. Most ESA Astronauts are stationed here when not assigned to a mission. Astronauts spend a large part of their time traveling between other space agencies like Roscosmos in Russia and NASA in the USA.

How many Astronauts are currently active at ESA?

ESA Astronaut corps hold currently seven active Astronauts: Samantha Cristoforetti (IT), Alexander Gerst (GER), Matthias Maurer (GER), Andreas Mogensen (DEN), Luca Parmitano (IT), Tim Peake (UK), Thomas Pesquet (FR). Active ESA Astronauts will continue to fly once the new class will join.

In addition to this, there are multiple previous Astronaut classes who continually support and contribute to ESA and society, even though they no longer hold active flight roles.

Astronaut duties and responsibilities

Astronauts are highly skilled professionals who must be able to apply their considerable knowledge and expertise under circumstances of high stress and pressure, often being away from family and normal social life for extended periods. They bear tremendous responsibility while in orbit and must be determined to succeed. Being an Astronaut is a lifetime challenge and this is what makes them special.

To enable them to fulfil their duties, Astronauts are uniquely and continuously trained. On top of that, ESA Astronauts are amongst the most visible players in human spaceflight and as such are natural ambassadors for ESA and its programmes. In this role, they need to be present in events and space-related discussions and are also very active on media and in public appearances.

For more information on the duties and responsibilities of the ESA Astronauts, please refer to the vacancy notice.

What is the typical role of an ESA Astronaut?

European Astronauts currently join long-duration flights aboard the International Space Station,

performing experiments in microgravity and operating the Station's systems. They assemble, activate and test new Station elements, undertake scientific research and even act as test subjects in life sciences experiments.

The role of an Astronaut is constantly evolving. In the future, Astronauts must be prepared to venture farther from Earth as ESA participates in human and robotic missions to the Moon, and agencies work together to establish a sustainable lunar presence.

What do Astronauts do when they are not training for a flight?

Astronauts provide technical support to human and robotic space exploration projects, maintain their skills through refresher training or on-Earth missions and undertake public relations activities to communicate the importance of space and exploration. They are also very active in social media and public appearances, as their missions and tasks are targets of general curiosity.

How long is Astronaut training?

Astronaut training never stops, but it does consist of three main phases: basic training, pre-assignment training and assigned crew or so-called increment training.

Immediately after recruitment, Astronaut candidates undertake one year of basic training at their duty station, the European Astronaut Centre. Training begins with information on ESA and other space agencies along with their main space programmes. After this introduction, trainees proceed to fundamentals across a wide range of engineering and science disciplines. A third block covers major space systems: the International Space Station ISS, transportation vehicles such as US commercial crew vehicles (SpaceX & Boeing) and the Russian Soyuz spacecraft. The operations of these systems including ground control are included. Basic training also builds Astronautic skills that are required for specific tasks on the ISS such as extravehicular activities (spacewalks), robotics, spacecraft rendezvous and docking. Russian language, human behaviour and performance training as well as survival skills round off the Basic training.

Pre-assignment training is the next step in Astronaut training. This is a variable duration phase that provides Astronauts from all International Space Station partners – NASA (USA), Roscosmos (Russia), ESA (Europe), JAXA (Japan) and CSA (Canada) – with knowledge and in-depth skills to operate, service and maintain the Station's modules, systems, payloads and transport vehicles. This training is more detailed but still generic, supplying expertise that Astronauts need for almost any flight to the Space Station. It includes specialisation in some functions, such as resource and data operations, robotics, navigation, maintenance, spacewalks, medical aspects and payloads. Lessons are conducted at all the partner sites to allow first-hand familiarity with flight elements and operations. The Astronauts are also performing support tasks for ongoing missions in this phase.

Once an Astronaut has been assigned to a mission, they begin increment training. This is focused on the specific mission tasks to be performed by the Astronauts during their 6 month stay on the ISS and takes about 1.5 years. Skills and knowledge from the previous training are now applied to the experiment program from a multitude of scientists across Europe and beyond. The Astronauts learn to operate the research equipment and the scientific background of the experiment. The crewmembers also prepare for running the spaceship components of the ISS, including monitoring and maintaining as well as repairing failed components. Intensive training for the crew transport vehicle, safe living on-board and emergency reactions complete the preparation for the mission.

Astronaut training is constantly evolving in line with advances in technology and mission requirements. New formats such as virtual and augmented reality help make learning more immersive and enable remote training. Analogue courses such as ESA CAVES (Cooperative Adventure for Valuing and Exercising human behaviour and performance Skills) where Astronauts perform an exploration mission in a underground cave, NEEMO (NASA Extreme Environment Mission Operations) in which Astronauts live in an underwater research station for 2 weeks, or ESA's geological field training course PANGAEA, also help Astronauts develop their skills and improve their knowledge in similar environments to those they may encounter beyond our planet.

Is there any gender related difference in training?

No. All Astronauts are trained to the same level of proficiency, regardless of gender. ESA is an equal opportunities employer and strongly encourages people of all genders to apply for all positions at ESA.

The ESA Exploration Programme

Where are we going next?

Exploring space is about travelling farther and coming back with new experiences and knowledge to help us on Earth.

Our strategy includes three destinations where humans will work with robots to gather new knowledge: low-Earth orbit on the International Space Station, the Moon and Mars. The three destinations share a common horizon goal, namely human presence on Mars.

After 20 years ISS Low Earth orbit will remain and grow as an important exploration destination in its own right.

In the short term, the exploration programme includes Europe's service module for NASA's Orion spacecraft returning to the Moon, a landing on the Moon with Roscomos' Luna and drilling into Mars with ESA's ExoMars rover.

In the medium term human presence around the Moon will be facilitated by a Gateway (Lunar station) where ESA is contributing a habitation module (IHAB) and module providing

communication infrastructure, refuelling capabilities and a window (ESPRIT) while an international robotic mission will go to and return from Mars (MSR).

What will we do there?

Career Astronauts will carry various activities on-board the ISS, ranging from performing scientific experiments (fundamental research in human physiology, biology, physical sciences) and technology demonstrations (applied research) to participating to maintenance activities of ISS.

Career Astronauts will be fully integrated to the ISS permanent Expedition crews, and they will also be involved in many important activities (e.g. science, EVA, cargo transfers, maintenance) sponsored by other International Partner agencies. Project Astronauts, should they be selected from the Reserve will focus on dedicated shorter duration missions, whose scope may greatly differ. It is also expected that Career Astronauts will also communicate about and advocate our exploration programme to the general public.

A Gateway farther afield than the International Space Station will be a springboard for a sustainable lunar surface exploration and preparing for the next big leap to Mars.

Robots will work hand in hand with Astronauts and ground control to scout ahead, prepare landing sites and go to places too dangerous or impractical for humans.

ESA will also work with Project Astronauts to become ambassadors for Space in their respective countries.

Which responsibilities will Astronauts have in these new ventures?

- Gateway → Installing and running experiments internally and externally. Performing human research. Going down to the surface and supporting surface missions. Processing and returning lunar samples. Maintenance and assembly. Public engagement activities.
- Moon → Field geology, sample collection, deployment of scientific equipment, operation of robotic equipment, Public engagement activities.
- Mars → Currently minimal, but expected to increase significantly in the future

Life in Space

Do Astronauts develop health problems during their stay in space?

Spaceflight is hazardous by its very nature and, off Earth, an Astronaut's wellbeing depends on life-support systems. While no dangerous long-term conditions are known to develop as a result of spaceflight, weightlessness does have negative impacts on human physiology. These include loss of bone and muscle mass while in orbit.

ESA Astronauts are supported by a dedicated space medicine team based at ESA's Astronaut centre in Cologne, Germany. This team is responsible for limiting or preventing the space environment from affecting the physical and mental health of Astronauts. The environment and life-

support systems are continuously monitored and there is a thorough preventive and countermeasure programme in place.

Are there medical examinations in space?

A medical doctor, known as a flight surgeon, takes care of each Astronaut before, during and after their flight. The Astronaut and doctor remain in regular contact to discuss health issues and perform medical tests in space.

While some Astronauts are qualified physicians or medical researchers, in general, there is no permanent doctor on board the International Space Station. Two Astronauts are assigned as Crew Medical Officers and trained to provide medical support during their mission. These crew members offer basic medical support similar to a paramedic on Earth.

A medical checklist on the Space Station helps Astronauts diagnose and treat sick or injured crew members. Ground-based flight surgeons are also on-hand at all times to guide Astronauts through this checklist and help make clinical decisions.

The crew has access to several medical kits for common drugs, such as aspirin or other mild pharmaceuticals, as well as an emergency medical kit with painkillers, anaesthetics, dental medication, bandages, stethoscopes, a defibrillator and other advanced life-support tools and medications.

Astronauts may also speak to their flight surgeon for 15 minutes once per week on a secure channel to discuss any medical issues. This is known as a private medical conference.

What about an Astronaut's teeth?

Dental problems have occurred in space in the past. However, to minimise any potential issues, each Astronaut's dental condition is thoroughly analysed ahead of their flight. Fillings may be redone as a precaution.

In space, a basic emergency dental kit is available. Astronauts get hands-on training at ESA and NASA where they learn how to manage the most common dental problems in orbit.

What are the physical effects of a long stay in space?

A long stay in space has many physical consequences, including the loss of muscle and bone mass and strength, reduction of postural control and locomotion, and significant loss of blood volume and reduced cardiovascular capacity. However, these effects are temporary. ESA's space medicine team helps each Astronaut mitigate these through appropriate diet and exercise in space, and supports their rehabilitation when they return to Earth.

Is it true that Astronauts lose bone mass in space? Can it be cured?

Depending on the level of physical exercise and the individual, Astronauts can lose about 1% of

their bone mass per month in space. The time required to recover this mass after a mission depends on the flight's duration. For a long flight of around six months, it will take at least six months to return to pre-flight bone levels. It also depends on physical exercise: exercising during a mission speeds the recovery.

How is an Astronaut's day in space organised?

Each day in orbit (apart from rest days) is carefully planned by mission control. The 12-hour working day on the Space Station begins with a wake-up call. After a quick rub down with a soapy cloth, the crew has breakfast and runs through the jobs for the day with mission control. These include performing scientific and technological experiments that sometimes involve speaking to scientists on Earth, maintenance, repairs, and general operation of the space station as well as public relations activities.

Astronauts enjoy three meals a day, with drinks and snacks always available. At least two hours each day are spent on physical exercise. This is essential to keep the crew fit and healthy. Loading a spacecraft with rubbish and unloading fresh supplies is an important task too. Many hours can also be spent getting ready for and performing spacewalks, also known as Extra Vehicular Activity (EVA).

How do Astronauts eat in space?

Most of the food Astronauts eat in space is packaged in cans or pouches and has to be prepared in a special way to ensure that it can be consumed in weightlessness. The most common preparation for space is dehydration. Astronauts rehydrate this food simply by putting it in their mouth or adding water. Other food items are thermostabilised, which involves heat processing to destroy harmful microorganisms and enzymes. Fresh fruits, vegetables and tortillas are also delivered by resupply missions, but must be consumed in the days immediately following their arrival to prevent spoilage.

How do Astronauts go to the toilet in space?

The toilet is designed for use by all genders. A seatbelt and foot restraints hold the Astronaut on the seat, while air currents pull waste into receptacles – one for each waste product. Urine is combined with other water waste and faeces are vacuum-dried, chemically treated to remove odour and bacteria, and stored for removal by spacecraft.

How do Astronauts shower in space?

Astronauts do not take showers in space. The International Space Station recycles as much as possible and water is one of the most precious resources. Showers are not convenient in weightlessness – water just floats around, so Astronauts use wet towels instead.

How do Astronauts sleep in space?

Due to the microgravity environment, there is no 'up' or 'down' in space. As a result, Astronauts are

weightless and can sleep in any orientation they wish, but each has their own crew cabin and a sleeping bag that they strap to the wall to keep them from floating around.

What do Astronauts wear in space?

Astronauts generally wear ordinary clothes such as t-shirts and trousers on the Space Station. They also wear socks, but no shoes, as they often use footholds placed around the Station to keep themselves steady while working.

As there is no washing machine on the Space Station, it is hard to pack enough clothes like underwear or socks, because each kilogram launched into space must be carefully managed. As a result, they cannot change their clothes every day. Underwear is changed every two to three days. On average Astronauts get one pair of shorts and a t-shirt every three days for exercising. Their work shirts and trousers/shorts are changed on average once every 10 days.

During their launch and return to Earth, Astronauts wear a spacesuit. This suit differs depending on their spacecraft. While on mission, Astronauts may also wear a different kind of spacesuit to perform tasks outside the Station. European Astronauts performing spacewalks from the International Space Station wear NASA's extravehicular mobility unit, or EMU suit. Suits used by Astronauts to perform spacewalks on the lunar surface will be different again and are currently in development by NASA.

Do Astronauts have free time in space?

The crew normally enjoy some free time before bed. They also have the weekends off. This is when they might write emails home or talk to their families, watch movies, read books, or play music or games. But the most popular leisure pursuit in space is looking out the window, watching the Earth turning below, taking photos and videos and sharing them with everybody on ground.

HR AND LEGAL RELATED QUESTIONS

Who? and How to Apply?

Who can apply?

ESA is an equal opportunities employer, committed to achieving diversity within the workforce and creating an inclusive working environment. Anyone who meets the requirements of an ESA job description is encouraged to apply.

How and where to apply?

The vacancy will open on the [ESA careers website](#) on **31.03.2021**. Only applications made online through the ESA careers website and submitted before the vacancy closes can be considered. Applications submitted after the deadline will not be accepted.

To apply, you will need to create an account and upload the documents specified in the vacancy notice, namely a CV, a motivation letter, a copy of your passport and a medical certificate issued by an aviation medical practitioner (*See Section 4.3*).

In addition to completing the application form and attaching the aforementioned documents, you will need to answer a questionnaire which will play a major role in the first stage of the selection process.

What are the nationality requirements?

According to the ESA Convention, applications can only be considered from nationals of an ESA Member State and associated Member States. These are: Austria, Belgium, the Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Ireland, Italy, Luxembourg, the Netherlands, Norway, Poland, Portugal, Romania, Spain, Sweden, Switzerland and the United Kingdom plus Slovenia and Latvia.

What documents are required to apply?

To apply you will need a detailed and updated CV, motivation letter and the required medical certificates in English. The formal EUROPASS template must be used for your CV to apply ([link](#)). We strongly advise for the motivation letter to be to be succinct and relevant, tailored according to the requirements of the vacancy.

Qualifications and Skills

What qualifications are needed to apply?

Applicants must have a minimum of a Master's(*) degree from a recognised academic institution in Natural Sciences (including Physical Sciences; Earth, Atmosphere or Ocean Sciences; Biological Sciences), Medicine, Engineering or Mathematics/Computer Sciences, with at least three years of postgraduate professional experience. This could include working in a lab, conducting research in

the field or working in a hospital. Holding A PhD (equivalent degree) in the aforementioned subject areas are considered as assets, but not essential.

A degree as Experimental Test Pilot and/or Test Engineer from an official Experimental Test Pilot School is also accepted. These institutions include EPNER (France), ETPS (England), USAF TPS (US Air Force) and USNTPS (US Navy). Commercial school NTPS is also included here. Candidates with these qualifications will be assessed on a case-by-case basis and may be asked to provide a copy of their diploma or statement from their school regarding the level of the qualification.

Requirements to apply

Due to the importance of the Astronaut role for ESA and the world, we are looking for the best!

The vacancy notice shows both the minimum requirements that every candidate has to fulfil as well as asset criteria that are considered highly desirable. These asset criteria will also be taken into consideration, especially as we expect a high amount of applications.

In addition to the requirements and criteria indicated in the vacancy notice, below are further requirements that every candidate must fulfil¹. Some of the below requirements will form part of the extensive training programme Astronauts need to undergo.

- The duties of an Astronaut require moderate to arduous physical exertion involving walking, running, standing, heavy lifting, crouching, crawling, and exposure to inclement weather. Therefore, Astronauts need to be willing to perform arduous physical activities as part of their duties.
- Astronaut candidates will be required to pass a swimming test during the first month of training. Therefore, Astronauts need to be willing to submit to a swimming test.
- The duties of an Astronaut require participation in flight operations in a parabolic flight aircraft to simulate microgravity and adjustment to zero gravity environments. Therefore, Astronauts need to be willing to undergo this type of flight training.
- To simulate microgravity in space, Astronaut candidates and Astronauts participate in training that requires extended time underwater (up to 8 hours a day), using SCUBA gear or the Extravehicular Mobility Unit (EMU, or spacesuit). Therefore, Astronauts need to be willing to spend extended time training underwater.
- To be mobile in certain locations it is required to have a driving licence. Therefore, candidates, who do not yet possess a valid driving licence for their home country or an international driving licence, need to be willing to obtain one.
- It is paramount that Astronauts work well in a team, even in confined spaces and under stressful conditions. Therefore, it is considered an asset if applicants have already had opportunities to support effective teamwork to reach challenging group objectives.

¹ Several of these points are part of the screening questionnaire.

- Space travel is associated with many risks and dangers. Therefore, it is considered an asset if applicants have had to experience activities associated with personal exposure, which required from them a sound risk management capability.

Despite all of the requirements in the vacancy notice and in this booklet, if you are truly motivated and you meet the minimum requirements but you are not sure you fulfil all the asset criteria, you should still apply.

All applications are welcome!

What are the top traits of a potential candidate?

The ability to work well as part of an intercultural, interdisciplinary team and remain calm under pressure is essential for all ESA Astronauts. ESA by its very nature is multicultural, and you will be working closely with people from all different backgrounds, all over the world and in challenging situations – clear, concise and considerate communication is a must.

Astronaut candidates should also possess excellent fine motor skills, strong analytical and reporting skills, the ability to rapidly assimilate and synthesise complex information and sound decision-making capabilities. You will need to absorb a lot of complex information throughout your training, and must learn to prioritise this to ensure you perform to a consistently high standard while in space.

The workload of an Astronaut is high and working hours can be irregular. This requires a high level of motivation. You must be flexible and able to cope with frequent travel both within and outside of Europe, and even off this Earth. You must also be willing to spend extended periods of time away from relatives or to be stationed outside your home country as you undergo intensive training, missions or assignments.

As Astronauts are some of the most visible ambassadors of Europe's space programme, they are also expected to participate in public relations and education activities and should be passionate about sharing their knowledge, with a willingness to engage wide audiences – particularly the younger generation – around ESA and space exploration. Following your mission(s) there is also the expectations that ESA Astronauts remain in the public domain for a significant time.

What are the language requirements?

Applicants must be able to speak and write English well (minimum CEFR C1). Good knowledge of another foreign language (minimum CEFR B2) and any other additional languages is a plus. Speaking Russian is an asset, but not a requirement. This is the second official language on the International Space Station and is taught during the Astronaut training.

Age Restriction

Every space mission represents an extremely high investment for all stakeholders involved. For this reason, and to ensure that each recruited Astronaut can fulfil at least two missions during their employment with ESA prior to retirement, the preferred age limit is 50 years.

Health and Physical Condition

Which medical and psychological standards are used to select the candidates?

An ESA Astronaut requires a multitude of skills, capabilities and characteristics. One important component of the selection process is an assessment of medical and psychological health. Candidates must demonstrate cognitive, mental and personality capabilities to allow them to work efficiently in an intellectually and socially demanding environment. Applicants are also expected to be free from any type of drug dependency.

Typical medical and psychological health standards are used. These standards are derived from evidence-based medicine, verified by clinical studies. Specifics are listed below:

- An applicant should be able to pass a PART-MED, Class 2 medical examination, conducted by an Aviation Medical Examiner certified by their national Aviation Medical Authority.
- The applicant must be free from any disease.
- The applicant must be free from any dependency on drugs, alcohol or tobacco.
- The applicant must have the normal range of motion and functionality in all joints.
- The applicant must have visual acuity in both eyes of 100% (20/20 vision) naturally or after correction with glasses or contact lenses.
- The applicant must be free from psychiatric disorders.
- The applicant must demonstrate cognitive, mental and personality capabilities to allow them to work efficiently in an intellectually and socially demanding environment.

In order to surpass the challenges and complexities in such a hostile environment as space, the Astronauts need to fulfil a set of physical, medical and psychological health standards. Being an Astronaut is extremely demanding on the body and mind, with long periods away from family and friends, high workload and irregular working hours and with routines beyond the comfort zone. The well-being of the Astronaut, alongside that of the whole team, is the condition for the success of each mission.

For the above reasons, all applicants must upload onto their application form a medical certificate issued by an aviation medical examiner that shows that the applicant is medically certified for a private pilot licence (PPL) or higher (e.g. commercial pilot licence). It is not required to hold a PPL but Astronauts need to be medically fit to exercise the duties of a private pilot. The uploaded medical certificate will only be visible to, and will be verified by, the ESA personnel responsible for

the first screening of applications as well as the ESA medical board. The certificate will remain in your application file to which only the aforementioned personnel have access. ²

What is the level of fitness required?

It is important to be healthy but ESA does not look for extreme fitness or high-level athletes. Over-developed muscles may actually be a disadvantage for Astronauts living in weightlessness. There is no specific sport we recommend. Physical activity in general is beneficial to health. In terms of the selection process, the physical fitness and medical components are either pass or fail. It is not a graduated system.

What preparation is necessary for the medical tests?

During the medical selection, applicants undergo a number of tests across many areas. Some tests are physically demanding, like bicycle or treadmill exercises. Some may be invasive and others may be just questionnaires. There is nothing you can do generally to prepare for these medical examinations. If an examination requires specific preparation, such as fasting before giving a blood sample, you will be advised in advance.

Is there a height/weight requirement for Astronauts?

Astronauts should be at least 153 cm to fit in the space suit and maximum 190 cm to be able to enter the capsule.

Furthermore, they should have a Body Mass Index (BMI) representing a “normal weight” as per the definition of the World Health Organisation (WHO)³.

What are the eyesight requirements to apply?

In terms of visual range requirements, the medical standards for pilots apply.

The main tests applicants must pass include visual acuity, colour perception and 3D vision. Wearing glasses or contact lenses is not a reason for disqualification in itself, but would be evaluated if a visual defect is known to progress rapidly and could be a reason for disqualification. Minor visual defects that require corrective lenses to achieve perfect vision are acceptable. Some surgical interventions to correct visual acuity can lead to disqualification, while other surgeries are acceptable – each case is evaluated on an individual basis.

What are the hearing requirements to apply?

² With regards to data protection: If the medical certificate does not describe medical data (as is the case for a medical certificate due to sick leave for example), there is no need for concern.

However, if the document describes medical data, it can only be processed by the ESA medical team.

³ (<https://www.euro.who.int/en/health-topics/disease-prevention/nutrition/a-healthy-lifestyle/body-mass-index-bmi>)

Applicants cannot have any hearing impairment, i.e. they have to have a hearing capacity of 25dB or better (better ear) according to the definition of the World Health Organisation (WHO). This zero-impairment requirement is necessary as Astronauts are sometimes exposed to high levels of noises while at the same time they need to ensure communication over radio with the ground for safety reasons.

What are the psychological and intellectual requirements?

General characteristics expected of applicants include but are not limited to: good reasoning capability, the ability to work under stress, memory and concentration skills, aptitude for spatial orientation, psychomotor coordination and manual dexterity. A candidate's personality should show high motivation, flexibility, gregariousness, empathy, non-aggression and emotional stability

In view of the very specific demands placed on Astronauts, both in training and in space, the selection process focuses particularly on the psychological health standards required for an Astronaut and applies psychometric testing throughout many of the selection stages. In addition, the selection process entails a medical screening on the basis of international standards of long-term missions in space.

Additional Note on Disabilities

If you have any disability and you are confident that you fulfil all requirements of the Astronaut vacancy notice, you can apply. You need to compete in all tests during the selection process along with the other applicants. In addition, as indicated in *Section 2.5* ESA is pioneering a feasibility project to send individual(s) with physical disabilities into space. As a first step, ESA is publishing a dedicated vacancy notice to select individuals with physical disabilities for the Astronaut Reserve.

Recruitment Process and Selection

How to track the application once submitted?

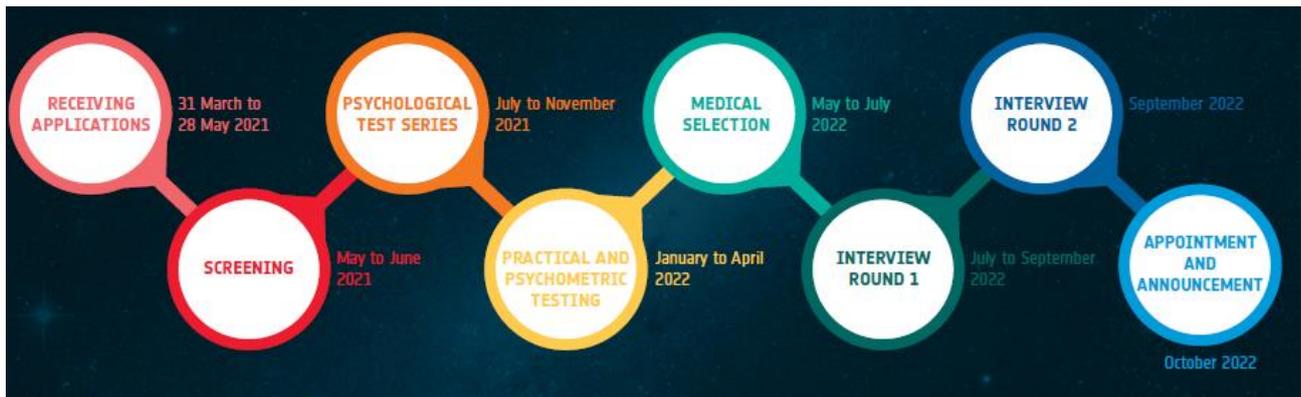
All the applications receive an automatic acknowledgement of receipt. Once you have applied, you will be able to track the status of your application. All candidates, whether they are selected for the next step of the selection process or not, are informed, by email, about the outcome of their application. Any enquiries concerning your future or current application should be sent to Astronaut.recruitment@esa.int

What is the next step once the applications deadline is due?

The vacancy notice will be open for eight weeks, starting from 31 March until 28 May 2021. Only the applications sent through ESA careers website will be considered.

The Astronaut Selection Process

The selection process consists of 6 selection stages, foreseen to last from the closure of the vacancy notice on 28 May 2021 to the world-wide announcement of the selected Astronauts around October 2022.



The Selection Stages

Below is a short summary of each of the stages. If you are invited to one of the test phases or interview rounds, you will receive additional information for that particular selection stage together with your invitation.

- Receiving Applications: You need to submit your application online through the ESA careers website before the closure of the vacancy.
- Stage 1: Screening: Several screening rounds will be conducted on the basis of all documents submitted with the application form as well as the screening questionnaire that you will have completed as part of your application.
- Stage 2: Test Phase 1 consists of cognitive, technical, motoric coordination and personality tests.
- Stage 3: Test Phase 2 is an assessment centre consisting of psychometric tests, group and individual exercises as well as practical tests.
- Stage 4: Test Phase 3 is a medical selection that will test your physical and mental abilities against international medical standards for long-duration Astronaut missions.
- Stage 5: Interview Round 1 is a panel interview that will test your technical and behavioural competencies. At this stage, your educational qualifications will be verified and a criminal record check carried out.
- Stage 6: Interview Round 2 is the last selection stage, consisting usually of an interview with the Director General of ESA, after which the final decision will be taken.
- It is currently foreseen that all of the test phases and interview rounds will be held face to face and will therefore require travel to different locations across Europe. Assuming that the COVID-19 circumstances will not yet have abated in the near future, travel restrictions and protective measures will need to be taken which might also have an impact on the timelines.

Progress through the selection

The entire selection process is quite lengthy and will take more than a year. Therefore, please prepare yourself mentally for such a strenuous process and the related waiting times.

After every selection stage, only those candidates who fulfil the requirements or criteria and/or perform the best in the tests compared to the other candidates will continue. You will be notified at each stage if you are successful or not in moving to the next one. We are expecting to receive a

high number of applications for this vacancy which may mean that it can take some time before you are informed of the outcome of a given stage.

For this reason, too, while every candidate will be informed of the outcome of their application, only those who do not pass the medical screening or interview rounds 1 and 2, i.e. from Stage 5/6 of the selection process onwards, can be given verbal feedback⁴. This will be provided on request.

If you succeed at each stage: congratulations, you will be one step closer to becoming an Astronaut!

Should you not succeed, please don't be discouraged. The Astronaut selection is highly competitive and geared towards a very specific candidate profile. But there are other exciting opportunities to work for ESA. We would encourage you to check out other vacancies we publish.

Contractual status

The aforementioned selection process results in recruiting 4-6 candidates who will be offered an ESA staff contract for an initial duration of 4 years, which may be extended into an indefinite duration if the applicable conditions are met. The candidates offered such a contract will immediately join the ESA Astronaut Corps as Career Astronauts.

In addition to recruiting Astronauts into the existing corps, ESA will for the first time also establish an Astronaut Reserve. This Reserve will be composed of approximately the 20 best candidates among those who were not recruited at the end of the selection process, should they agree to join it. Astronauts in the Reserve will remain employed by their current employers, but they will benefit from training together with the ESA Astronaut Corps. When not on a mission, Astronauts in the Reserve will have a consultancy contract with ESA, the specifics of which are still being determined. They can be called for specific missions when and if they arise. If they are offered the opportunity to participate to a mission, they would have to agree to being recruited by ESA as Staff for the duration of the mission.

What happens to the candidates that reach the final round but are not selected?

Candidates that were successful throughout the entire selection process, and are not recruited, will be offered the possibility to join the Astronaut Reserve.

Benefits and Salary

Remuneration

Below is a short summary of the remuneration package that is offered to ESA staff members.

- The position of ESA Astronaut is classified within the A2-A4 grade band of the Coordinated Organisations' salary scale. ESA being an inter-governmental organisation, Astronauts

⁴ This refers to verbal feedback. However, this cannot imply that the other candidates will not have the opportunity to get feedback in writing. This does not exclude the possibility to reply with a generic answer should the case occur.

have the status of international civil servants and are therefore exempt from national income tax.

- In addition to the basic salary, ESA provides a number of benefits and allowances for its staff members such as expatriation and family allowances, ESA childcare facilities. In addition, expatriated staff may receive financial support with the education of their children.
- A comprehensive relocation support package is provided for those moving from their home country to work for ESA. This consists of help in finding accommodation, reimbursement of removal expenses plus an installation allowance to help with the costs associated to settling into a new home. In addition, ESA offers language classes.
- ESA also offers generous medical insurance and pension packages, with a current retirement age of 63.
- In addition to the fixed base salary (which may be adjusted yearly), staff benefit from yearly monetary rewards resulting from satisfactory performance.

ESA staff are entitled to 6 weeks of paid holiday per year plus an additional 12 public holidays. Expatriated staff are also entitled to home leave every two years, which consists of a paid trip for themselves and their family back to the home country and an additional 8 days of leave.

Any salary, benefits and allowances will be paid according to ESA's Staff Regulations, Rules and Instructions. If you are offered a post at ESA, you will receive a detailed explanation of the legal framework pertaining to the working conditions.