

The European Space Agency in brief

15 European countries (Austria, Belgium, Denmark, Finland, France, Germany, Ireland, Italy, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom) + 1 cooperating state (Canada) each contribute a small share of the taxes paid by their inhabitants to the European Space Agency. ESA also has cooperation agreements with certain other European countries.



This money makes it possible to have Europeans working on joint projects of importance to us all, to:

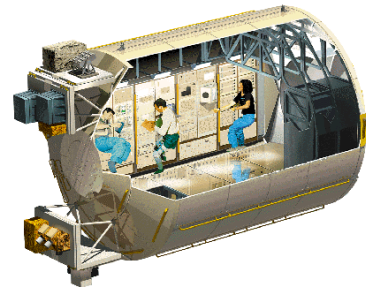
- **design and build** rocket launchers (the first Arianes) and satellites of all kinds
- **explore** the planets, the sun and outer space (Ulysses, Cluster), fly past comets (Giotto), map the stars (Hipparcos)
- **take pictures** of the earth to forecast the weather (the first Meteosats), study the environment to aid disaster rescue efforts (ERS, Envisat), monitor field crops or the seas
- **transmit** telephone communications and radio / TV broadcasts globally, covering remote desert and sea locations
- **locate** the position of ships, planes and lorries at any given time
- **conduct experiments** on plants and animals to better understand life on earth, do physics and chemistry to push back the frontiers of knowledge
- **have men and women working and living** in space (there is currently a 16-strong European astronaut corps) in the International Space Station which when fully assembled will be the size of a football stadium (it is currently being built by 10 European countries, the United States, Russia, Japan and Canada)
- **build** the ISS Columbus laboratory module providing a workplace in space, a 'ferry' to transport supply equipment and a 'minibus' to return the crew
- **command** satellites from the ground to journey to desired destinations and recover the information they collect



Ariane 5



ENVISAT (Photo ESA)



Columbus (Photo ESA / D.Ducros)

Over 1700 Europeans and Canadians work at ESA in many different fields (engineers, scientists, astronomers, technical staff, secretaries, administrators, financial specialists, lawyers, doctors, astronauts, etc.).

They are based mainly in **France** (Paris, Toulouse, Kourou), **the Netherlands** (Noordwijk), **Germany** (Darmstadt, Cologne) and **Italy** (Frascati), but also in **Spain** (Villafranca), and **Belgium** (Brussels, Redu), the **United States** (Washington, Houston, Greenbelt) and **Russia** (Moscow). All speak English or French, if possible both.

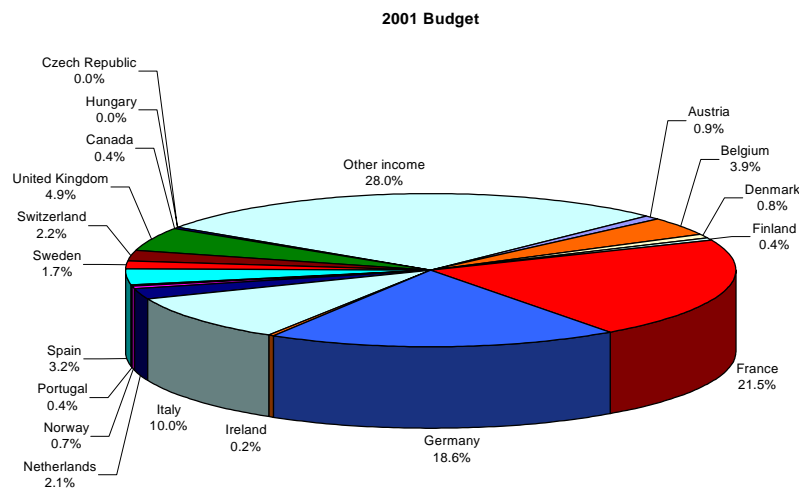
Country of origin at 31 March 2001	
Austria	29
Belgium	80
Denmark	26
Finland	13
France	403
Germany	341
Ireland	21
Italy	301
Netherlands	143
Norway	14
Portugal	1
Spain	104
Sweden	39
Switzerland	28
United Kingdom	163
Canada	20
Total	1726

Being in space means being above the air surrounding the earth (atmosphere), making it possible to:

- **get a better view of** the sun, the planets and the stars (without the atmosphere getting in the way)
- **permanently observe** the earth from above (aircraft need to make frequent landings to refuel)
- **simultaneously cover** regions of the earth which are very far apart or very isolated (for telephone or television communications), by being very high above it
- **do scientific research** in an environment where the gravity which keeps us on the ground is offset by other forces (in space, without powered propulsion, everything floats)

but also means feeling very hot (when facing the sun) or very cold (when it is out of sight), not being able to breathe without one's own supply of air and having to protect oneself from radiation.

Investment per year is over 2800 million euros (over US\$ 2400 million). Each country contributes partly according to its wants. This explains the different national budget contributions, since spending is not proportional to numbers of inhabitants.



For more information, you will soon be able to visit <http://www.education.esa.int>. Meanwhile, visit with your parents <http://www.esa.int>. Much of this online information is in English, so that it can be understood by most people in Europe and around the world. You will also soon be able to email us your messages, questions or suggestions to: education@esa.int.