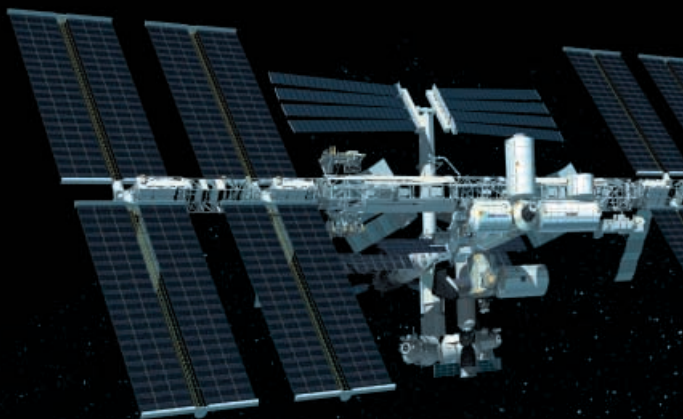




# ***Europeans in Space***

***The European Astronaut Centre***



***European Space Agency  
Agence spatiale européenne***

## Tasks and Organisation

*The European Astronaut Centre (EAC) in Cologne, Germany, is an establishment of the European Space Agency (ESA). It is part of the Directorate of Manned Spaceflight and Microgravity.*

*The European Astronaut Centre,*

- was founded in 1990 in pursuit of the European commitment to manned space programmes, in view of the International Space Station with the European contribution for a module, now designated Columbus, and the related Precursor Missions, extending soon the scope of activities with ESA's interests in the Space Station MIR,*
- is the home base of the ESA astronauts being members of the newly formed single European Astronaut Corps, with the home base functions administration, planning, scheduling and general services,*
- defines, prepares and implements astronaut training programmes for a variety of missions including the activities for the International Space Station and coordinates cooperation on astronaut training between ESA and its partners,*

- is responsible for the preparation, planning and scheduling of the European astronauts' tasks and flight assignments and coordinates astronaut activities with other countries,*
- provides support ranging from public relations assistance to medical monitoring. This support is especially important during extended stays by astronauts in space flight missions and at training centres of ESA's partners and includes support to their families at home or abroad,*
- supports the preparation and execution of astronaut candidate selections, providing the Director General of ESA with the information needed for the recruitment of new astronaut candidates.*

*Upon creation of the single European Astronaut Corps in Europe, in March 1998, the role of EAC was considerably extended. From that moment onwards, it is the home base of 16 European astronauts, most of them experienced through national space agencies and ESA missions.*

## **Astronaut Training**

*The definition, preparation and implementation of training programmes are among the most important tasks of the EAC. The Centre will be responsible for training on the European elements of the International Space Station. This calls for the development of courses, training methods and facilities, and the build-up of a team of instructors.*

*The existing EAC training programme is geared to intensive cooperation with international partners in various missions. The EAC trains the ESA astronauts and the partners' crew-members on ESA-provided elements and payloads. Training is given in three phases:*

## **Basic Training**

*Provides fundamental knowledge in basic scientific and technical disciplines and in organisational aspects.*

*In order to get used to working with technical flight equipment, to communicate in the required professional way, to carry out tasks under pressure of time and to learn to cooperate in a team, the astronauts also perform flight activities.*

*In addition, the astronauts are trained in SCUBA diving because a number of space operations are rehearsed under water in simulated microgravity conditions. A programme of physical exercises prepares them to cope with the physical stresses of the various phases of spaceflight (i.e. launch, orbital flight, re-entry).*

## **Advanced Training**

*This phase concentrates on in-depth knowledge of Columbus systems, payloads and Automated Transfer Vehicle (ATV) as well as the related operational procedures. Training facilities representing these elements and payloads will be operated at the European Astronaut Centre.*

## **Increment Specific Training**

*As soon as the crew for a specific mission has been assigned, the team starts training together on important sequences of the mission. International Space Station crews will regularly come to EAC in order to be trained on the operation of Columbus Systems and payloads as well as ATV. For mission simulations EAC will be linked to control centres, in particular the Columbus Control Centre and the ATV Control Centre.*

## **International Cooperation**

*International cooperation is the key to achieve ambitious goals. Sharing effort saves resources. ESA itself is an example of fruitful cooperation in space research. The United States has been the traditional partner since ESA's foundation. The highlight of this cooperation was the development of the ESA Spacelab as an important complement to the Space Shuttle system.*

*ESA developed also very good relations with the Russian space organisations. Many members of the European Astronaut Corps participated in missions to the space station MIR.*

*The next step will be the International Space Station. Japan and Canada are also taking part in this programme, and the geopolitical changes have made it possible to extend an invitation to Russia, so that the Space Station will be a truly global effort.*

*The EAC cooperates actively and closely with its NASA partner JSC, the Johnson Spaceflight Center and its Russian partner, the Yuri Gagarin Cosmonaut Training Centre near Moscow.*

## **Mission Participation and Support**

*On its foundation in 1990, the EAC formed the home base for three astronauts. They originally had been selected for the First Spacelab Mission, in which Ulf Merbold participated in 1983. Wubbo Ockels flew with Spacelab D1 in 1985. Claude Nicollier was at this date in training at NASA.*

*Since then the list of missions flown by European astronauts, most of them supported by the EAC, has lengthened substantially.*

*The participation of EAC staff in these missions has accumulated a substantial human, technical, operational and scientific expertise in manned space flight activities. The EAC provides not only substantial parts of the training and operational support during missions, but also medical support to the astronauts and their families at their duty stations in the USA and Russia.*

*Today an impressive number of 31 space missions have been performed by a 27 astronauts from ESA and its member states, providing EAC today with a large accumulated experience on manned space activities.  
(See table)*

## **Astronaut Selection**

*The present composition of the astronaut corps is a result of the fusion of all national astronaut teams of ESA member states with the ESA astronaut team into one single European Astronaut Corps. The professional background of the members is widespread and expresses the large scope of activities encountered in space research, technology development and operations.*

*In the future EAC will be solely responsible for the selection of the next generation of European astronauts. This will be decided in accordance with ESA's obligations as a partner in the International Space Station programme.*

**ASTRONAUTS OF ESA AND ESA MEMBER STATES IN SPACE**  
**May 2000**

<b>Name</b>	<b>Participating Organisation</b>	<b>Mission Programme/ Payload</b>	<b>Space Vehicle(s)</b>	<b>Year</b>
S. Jähn (D)	Germany, former GDR	Interkosmos	Soyuz 31/Salyut-6/Soyuz 29	26 Aug. – 03 Sep. 1978
J.-L. Chrétien (F)	CNES	Premier Vol Habité	Soyuz T 6/Salyut-7	24 Jun. – 02 Jul. 1982
U. Marbold (D)	ESA	Spacelab 1	STS-9	28 Nov. – 08 Dec. 1983
P. Baudry (F)	CNES	Spartan-1	STS-51 G	17 Jun. – 24 Jun. 1985
R. Furrer (D) E. Messerschmid (D) W. Ockels (NL)	DFVLR, ESA	Spacelab D-1	STS-61 A	30 Oct. – 06 Nov. 1985
J.-L. Chrétien (F)	CNES	Aragatz	Soyuz TM 7/MIR/Soyuz TM 6	26 Nov. – 21 Dec. 1988
H. Sharman (GB)	Private financing	Juno	Soyuz TM 12/MIR/Soyuz TM 11	18 May – 26 May 1991
F. Viehböck (A)	Austrian Space Agency	Austrorim	Soyuz TM 13/MIR/Soyuz TM 12	02 Oct. – 10 Oct. 1991
U. Marbold (D)	ESA	Spacelab International Microgravity Lab IML-1	STS-42	22 Jan. – 30 Jan. 1992
K.-D. Flado (D)	DARA/DLR	MIR '92	Soyuz TM 14/MIR/Soyuz TM13	17 Mar. – 25 Mar. 1992
D. Frimout (B)	Belgian (bilateral)	ATLAS-1	STS-45	24 Mar. – 02 Apr. 1992
M. Tognini (F)	CNES	Antares	Soyuz TM 15/MIR/Soyuz TM 14	27 Jul. – 10 Aug. 1992
F. Mulerba (I), C. Nicollier (CH)	ASI, ESA	EURECA-1, Tethered Satellite System	STS-46	31 Jul. – 08 Aug. 1992
H. Schlegel (D) U. Walter (D)	DLR	Spacelab D-2	STS-55	26 Apr. – 06 May 1993
J.-P. Haigneré (F)	CNES	Altair	Soyuz TM 17/MIR/Soyuz TM 16	01 Jul. – 22 Jul. 1993
C. Nicollier (CH)	ESA	Hubble Space Telescope 1 <sup>st</sup> Servicing Mission	STS-61	02 Dec. – 13 Dec. 1993
U. Marbold (D)	ESA	EUROMIR 94	Soyuz TM 20/MIR/Soyuz TM 19	04 Oct. – 04 Nov. 1994
J.-F. Clervoy (F)	ESA	ATLAS-2; CRISTA SPAS 1	STS-66	03 Nov. – 14 Nov. 1994
T. Reiter (D)	ESA	EUROMIR 95	Soyuz TM 22/MIR	03 Sep. '95 – 29 Feb. 1996
C. Nicollier (CH) M. Cheli (I) U. Guidoni (I)	ESA, ASI	Tethered Satellite System-1 Reflight USMP-3	STS-75	22 Feb. – 09 Mar. 1996
J.-J. Favrier (F)	CNES	Spacelab LMS-1	STS-78	20 Jun. – 07 Jul. 1996
C. André-Deshays (F)	CNES	Cassiopee	Soyuz TM 24/MIR/Soyuz TM 23	17 Aug. – 02 Sep. 1996
R. Ewald (D)	DARA/DLR	MIR '97	Soyuz TM 25/MIR/Soyuz TM 24	10 Feb. – 02 Mar. 1997
J.-F. Clervoy (F)	ESA	6 <sup>th</sup> Shuttle flight to MIR	STS-84	15 May – 24 May 1997
J.-L. Chrétien (F)	CNES	7 <sup>th</sup> Shuttle flight to MIR	STS-86	25 Sep. – 06 Oct. 1997
L. Eyharts (F)	CNES	Pégase	Soyuz TM 27/MIR/Soyuz TM 26	29 Jan. – 19 Feb. 1998
P. Duque (E)	ESA	SpaceHab	STS-95	29 Oct. – 07 Nov. 1998
J.-P. Haigneré (F)	CNES, ESA	Perséus	Soyuz TM 29/MIR	20 Feb. – 28 Aug. 1999
M. Tognini (F)	CNES	Chandra X-Ray Observatory	STS-93	22 Jul. – 27 Jul. 1999
C. Nicollier (CH) J.-F. Clervoy (F)	ESA	Hubble Space Telescope 3 <sup>rd</sup> Servicing Mission	STS-103	19 Dec. – 27 Dec. 1999
G. Thiele (D)	DLR, ESA	Shuttle Radar Topography Mission	STS-99	11 Feb. – 22 Feb. 2000
<b>Mission assignments</b>				
U. Guidoni (I)	ESA	9 <sup>th</sup> ISS flight (6A) Raffaello MPLM	STS-100	2001

*European Space Agency  
Directorate of Manned Spaceflight and Microgravity*

**EAC**

**European Astronaut Centre**

*Linder Höhe - D-51147 Cologne-Germany*

*Tel. +49 2203 60 01 0 - Fax +49 2203 60 01 66*

*<http://www.eac.esa.de>*