

CALL FOR CONCORDIA RESEARCH MD CANDIDATES

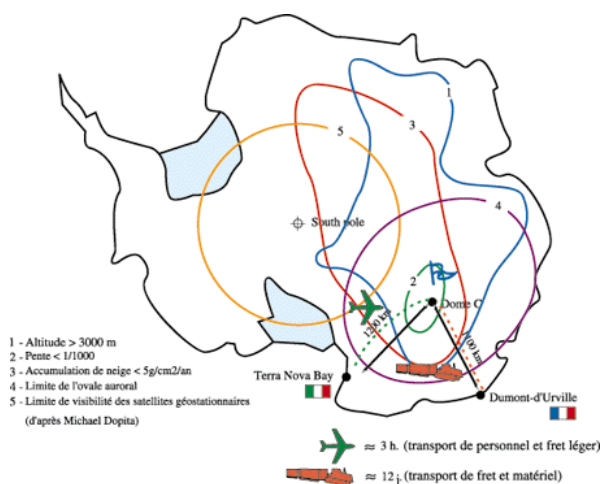
Background

Since a few years, ESA has been cooperating with the French Polar Institute (Institute Paul Emile Victor, IPEV) and the Italian Antarctic Programme (Programma Nazionale di Ricerche in Antartide, PNRA) on some activities at the Antarctic station Concordia.

Main motivation for this cooperation is that the characteristics of Concordia station make it a very interesting analogue for future human space exploration missions (isolation, confinement, autonomy requirement, limited resources etc.).

Examples of this cooperation include a common research announcement for medical and psychological research, the adaptation of technologies for grey water recycling, which ESA developed for spacecraft life support systems, to Concordia (where such a recycling unit is operating since March 2005), long-term medical, psychological and microbial monitoring etc.

In order to support the implementation of these activities, ESA is looking for candidates with a medical background, to fill one position in the next Concordia winter- over crew (leaving end 2012).



Antarctica and the Location of Concordia Station © IPEV

Concordia Station

Concordia station is a permanent international research facility high on the Antarctic ice cap. The station was built by IPEV and PNRA S.C.r.l.. The station has been permanently manned since November 2004.

The objective of Concordia station is to operate as an international research facility to conduct scientific programmes. Main fields of interest are glaciology, atmospheric sciences, astronomy and astrophysics, Earth sciences, technology and human biology and medicine.

The area in which Concordia station is located is considered to be one of the most hostile places on Earth. Some characteristics of the extreme environment are the following:

- An altitude of 3200m, equal to an equivalent altitude of almost 4000m on the equator, air pressure is 645 hPa (→ chronic hypobaric hypoxia).
- The time from mid-November to mid-February is considered the summer period, the winter-period correspondingly from mid-February to mid-November.
- Access to the station is only possible during the Antarctic summer.
- Overall mean temperature is -51°C , with a mean value of -30°C during summer and -60°C in winter (lowest record in 2002 -85°C).
- The landscape is "completely" flat.



Concordia Station © Y. Frenot/IPEV

Further general details on Concordia Station can be found at <http://www.concordiabase.eu/>

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Challenges

The challenges for a winter- over crew at Concordia are manifold. They include e.g.:

- Prolonged isolation and confinement (typical duration of a stay in the station is 12- 13 months).
- Fascinating, but hostile natural environment (extreme low outside-temperatures, chronic hypobaric hypoxia).
- Autonomy: the crew needs to be totally self-dependent especially from February to November where no access to and from the station is possible, even in emergencies.
- Life in a small multicultural setting (typically 12-14 crewmembers, different languages & behavioural customs).
- Limited mobility outside of the station buildings, especially during winter
- Night/Daylight variations (constant light in summer, constant darkness in winter).
- Managing life with limited resources and with consideration for the environment

In order to pursue ESA related activities at Concordia, ESA and the Steering Committee of Concordia initiate a call for candidates with a medical background, to fill one position in the next Concordia winter- over crew.

Tasks will include (non-exhaustive list):

- Participation in pre-departure meeting (one week in October) and relevant training
- Preparation of the implementation of medical and psychological experiments before departure.
- Implementation of medical and psychological experiments during the stay.
- Sampling of recycled water and analysis thereof.
- Participation in the normal shared tasks on the station (housekeeping).
- Some support for activities of other crewmembers.
- After the stay providing a debriefing report (“lessons learned”)

The selected candidate will not be responsible for the operational medical provision for the crew. However, in this constrained situation, openness to some support function for the station MD (if needed) is required, especially in case of a medical or surgical emergency and in the field of medical training and preventive medicine.

It is expected that the selected candidate will also participate as a test subject in the medical and psychological experiments. However, as for the other crewmembers, this participation is voluntary, can be stopped at any time without negative implications. More information on the experiments will be provided before the stay and “informed consent” requested.



human spaceflight

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Candidate profile:

- Interest in working in Antarctica
- Medical doctorate (or equivalent) and work experience
- Strong interest in medical and psychosocial research
- If possible some laboratory/research experience
- Very good English language skills desirable; French or Italian language skills are of benefit
- Excellent health
- No addictions
- Nationality and residence in one of the ESA member states (Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, the Netherlands, Norway, Portugal, Spain, Sweden, Switzerland, the United Kingdom and Canada).

The occupation will be implemented via a contract with the French Polar Institute, IPEV (typically approximately 1 month preparatory time in Europe and 13 months in Antarctica). The final amount of the salary will depend on the exact contract duration. It has to be taken into account, that e.g. transport, special clothing, communication facilities etc. will be provided by the Concordia partners.

In order to apply, a meaningful CV and a letter of motivation must be sent to:

Concordia@esa.int

(Questions before application should be sent to the same address)

Process and timeline

Deadline for applications is **8th of June 2012**.

Based on the Letters and CVs, 3-5 candidates will be invited for a thorough medical examination, psychological assessment and interview to Paris in July 2012.

The final selection will be made as soon as the results from all medical tests are available.

Pre-departure meeting, one week in the first half of October 2012.

Departure between end November 2012 – January 2013.