

The **Royal Observatory of Belgium (ROB)** and the **Vrije Universiteit van Brussel (VUB)** are jointly hiring

a **long term senior scientist**

to work on the **development of the Earth Climate Observatory (ECO) space mission concept** for the measurement of the most Essential of all Climate Variables (ECVs): **the Earth Energy Imbalance (EEI)**. The ECO space mission concept was recently accepted for Phase 0 study by the **European Space Agency (ESA)** as a **candidate Earth Explorer 12 mission**. ECO is proposed by a **European consortium** – led by ROB - with members from Belgium, Sweden, France, the UK, Germany and Switzerland.

The successful candidate is expected to work full time on the advancement of the **Scientific Readiness Level**, in order to contribute to the ECO Earth Explorer **space mission selection** for Phase B implementation. The successful candidate is expected to **supervise master and PhD students**, and to **attract PhD student funding**, thus **creating a joint ROB-VUB research group around the ECO space mission**.

The **funding** for the long term senior scientist is **garantueed for the first 5 years**, in the context of the FED-tWIN programme, funded by the **Belgian Science Policy Office (Belspo)**, and opens the **perspective of a long term career** in the case of good performance following initially defined Key Performance Indicators (KPIs). The full time position consists of a half time position at the ROB, combined with a half time position at the VUB. At the VUB the long term senior scientist will have a **10% professor (ZAP) appointment**, opening the **perspective of a long term academic career**. In this context, **limited teaching duties** may be assigned to the long term scientist during the first 5 years.

The specific FEDt-WIN research profile Prf-2022-010\_ECO 'Earth Climate Observatory, builds further on a joint ROB-VUB PhD research which was concluded in 2022. For the long-term postdoctoral FED-tWIN collaboration, we propose to further develop dedicated innovative radiometry space instruments that can measure both the radiation of the Earth and Sun with increased accuracy and stability, owing to a differential Sun-Earth measurement.

The expected starting of the employment is **15 December 2024**.

Candidates are required to have a **PhD in Sciences or in Engineering Sciences**, or a degree or certificate recognized as equivalent, obtained **not longer than 12 years** prior to the predetermined submission date of his/her candidature file. This period is extended by 1 year for any absence due to pregnancy, parental or adoption leave, as well as any prolonged absence due to illness of the candidate himself and/or a first-degree relative.

When assessing a non-Benelux degree, an equivalence certificate must be requested from NARIC, see <https://www.naricvlaanderen.be/en/recognitions/recognition-of-foreign-qualifications>. We advise the candidate, if applicable, to start the recognition procedure at NARIC as soon as possible.

In addition, the candidate ideally has:

- carried out **high-level scientific research**, as substantiated by **publications in peer-reviewed international journals**
- experience with, or at least interest in **optics, electronics and/or data processing**
- **programming experience**, preferentially in C++
- the **motivation** to start a **long term** career working on a space project related to climate change

Are recommended:

- demonstrable **experience in securing external funding** for research or innovation projects
- experience with **satellite remote sensing, space borne optical instruments** and/or **geophysical data processing**
- experience with **space projects**
- experience of working in an **international research consortium**
- experience in **teaching at university level**, and in **supervising students** at master's and doctoral level

### How to apply

Is this the job you've been dreaming of?

Then apply, **at the latest on 26/05/2024**, simultaneously by email to both promoters [steven.dewitte@oma.be](mailto:steven.dewitte@oma.be) and [francis.berghmans@vub.be](mailto:francis.berghmans@vub.be), and [via jobs.vub.be](https://jobs.vub.be), and upload the following documents:

- a **CV including a full list of publications** and other elements relevant for the job description above.
- an **extended motivation letter** (max. 4 A4 pages) including personal motivation, a vision on the future research, development of an ESA Earth Explorer space mission, guidance of master and PhD students, funding of PhD students, familiarisation with ROB and VUB, initial ideas on the creation of a joint research group, education.
- a **copy of the relevant diplomas** (master and PhD)

### About ROB

The **Royal Observatory of Belgium (ROB)** – see <https://www.astro.oma.be/en/> - was founded in 1826, before the independence of Belgium. It is a **Federal Scientific Institution (FSI)** belonging to the Belgian Science Policy (Belspo). Researchers at the ROB study planet Earth, the sun as well as other objects from the near and far universe, with a **strong focus on space missions**. Among the scientific disciplines of the ROB we may find astronomy, planetology, geophysics, seismology, space geodesy and solar physics. For these, the ROB cooperates with numerous international centers.

At ROB, the ECO FED-tWIN researcher will work in the **Operational Directorate (OD) "Solar Physics and Space Weather"** – see <https://www.sidc.be/>. This OD has about 50 staff on a full-time equivalent basis and has **applied research** activities around solar observation from Earth, amongst others through the world data center for long-term sunspot observation, through the **space missions** Proba 2, EU1 on Solar Orbiter and Proba 3, and through space weather services operating under the umbrella of the European Space Agency (ESA) and the International Civil Aviation Organization (ICAO).

At the ROB, the 50% appointment takes place at SW2 level (senior researcher) with a contract of indefinite duration.

### About VUB

For already 50 years, the **Vrije Universiteit Brussel (VUB)** – see <https://www.vub.be/en> - has stood for freedom, equality and connectedness. These values are strongly present on our campuses, in our students as well as our staff. At the VUB, you'll find a diverse collection of personalities: pure innovators, but especially people who are 100% their authentic selves. With about 3,500 employees,

we are the largest Flemish-speaking employer in Brussels, an international city with which we are all too happy to be affiliated and around which our four campuses are located. Our education and research are grounded in the principles of free research with an eye on human progress.

The host research group at the VUB is "**Brussels Photonics**" (**B-PHOT**) – see <https://www.b-phot.org/> -, part of the Department of Applied Physics and Photonics (TONA) of the Faculty of Engineering. The core activities of this research group are articulated around "**photonics**" - **the science and technology of light** - which is an essential digital technology of the 21st century and the key technology that uses the unique properties of light for peaceful purposes. B-PHOT has a unique research and innovation centre at VUB's Photonics Campus Gooik. B-PHOT unites a critical mass of 70 highly trained researchers and technology experts, providing research, innovation and STEM education, and connecting photonics with other scientific and engineering disciplines. B-PHOT addresses current and future global challenges in various sectors thanks to photonics: climate, biomedical engineering, industry 4.0, "agrifood", information and communication, mobility, sustainability and smart cities.

The administrative language of the VUB is Dutch. In case of insufficient knowledge of Dutch, the VUB will provide an integration course. After a maximum of five years, a member of the academic staff must demonstrate adequate knowledge of the administrative language (ERK level B2). For a complete overview, please consult the complete language regulations on <https://jobs.vub.be/content/Regulations-concerning-language-proficiency/>.

At the VUB, the candidate is appointed as a 40% postdoc researcher with a contract of indefinite duration, and a 10% ZAP lecturer (bar scale 600) with a temporary appointment. for a period of five years, renewable after positive evaluation.

#### More information

The current state of the ECO space mission concept is described in the papers  
<https://www.mdpi.com/2072-4292/12/3/425>  
<https://www.mdpi.com/2072-4292/12/16/2556>  
<https://www.mdpi.com/1424-8220/21/13/4444>  
<https://www.mdpi.com/2072-4292/15/23/5487>

Information on the ESA Earth Explorer program can be found at  
<https://earth.esa.int/eogateway/missions/earth-explorers>

Information on the ECO selection for Phase 0 can be found at  
[https://www.esa.int/Applications/Observing\\_the\\_Earth/FutureEO/Preparing\\_for\\_tomorrow/ESA\\_selects\\_four\\_new\\_Earth\\_Explorer\\_mission\\_ideas](https://www.esa.int/Applications/Observing_the_Earth/FutureEO/Preparing_for_tomorrow/ESA_selects_four_new_Earth_Explorer_mission_ideas)  
<https://missionadvice.esa.int/ee12-mission-advisory-groups/>

Information on the Belspo FEDt-WIN programme can be found at  
[https://www.belspo.be/belspo/FED-tWIN/index\\_en.stm](https://www.belspo.be/belspo/FED-tWIN/index_en.stm)

Do you have further questions about the job content? Contact Steven Dewitte and/or Francis Berghmans at [steven.dewitte@oma.be](mailto:steven.dewitte@oma.be) - [francis.berghmans@vub.be](mailto:francis.berghmans@vub.be).