BELGIAN INSTITUTE FOR SPACE AERONOMY

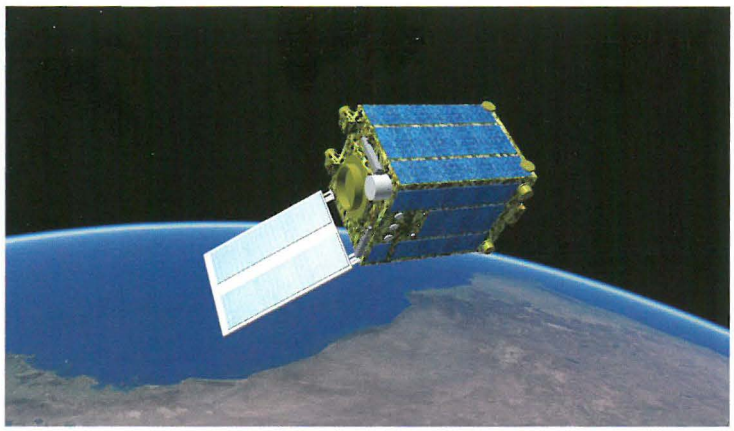
Research for the benefit of society

Recognised for its research work on space physics and the physics and chemistry of the atmospheres, BIRA-IASB endeavours to put its research into practice and make it available for use by scientists, political decision-makers, industrialists and the public at large.

The first pillar of research for BIRA-IASB is space physics which deals with the impact of extraterrestrial phenomena (solar wind, charged particles, etc.) on our planet. This impact can be perceived not just on humans but also on satellites, planes and electrical networks.

The second pillar relates to understanding the atmosphere of the Earth and other planets of the solar system like Venus and Mars. In this context BIRA-IASB researchers study the impact of chemical particles on the Earth's environment. Research on the stratospheric ozone means making "predictions" may be made about how the hole in the ozone layer may evolve and so deducing information about the impact on our planet. BIRA-IASB is also recognised for its research on aerosols whose atmospheric concentration has a direct influence on air quality, and greenhouse gases such as CO_2 and methane (CH_4), in order to have a better understanding of climate change.

BIRA-IASB research work would be inconceivable without measuring instruments, placed either in orbit for global measurements or on the ground for regional measurements. For this reason, one of the projects BIRA-IASB is involved in is PROBA-ALTIUS (Atmospheric Limb Tracker for the Investigation of the Upcoming Stratosphere). Through its operations centre, B.USOC, BIRA-IASB provides support and infrastructure to scientific teams to prepare, develop and carry out experiments that require a space environment. BIRA-IASB is also proud of the fact that NASA and ESA selected a Belgian instrument, NOMAD, for inclusion on the payload of the ExoMars orbiter mission to study the atmosphere of the red planet. The launch is planned for 2016. One of the main aims will be research on methane, which could be a deciding factor in researching the presence of life on Mars.



The ALTIUS satellite

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DOAS, an IASB instrument in front of the Olympic Stadium in China

To make sure that the general public sees concrete aspects of the research BIRA-IASB is involved in the European programme GMES, which provides very useful data on vegetation, oceans, air quality s.o. This practical mindedness can also be found in its contribution to the European Climate Change Programme (a study of the impact of aerosols and the atmospheric content of ozone on climate change). BIRA-IASB also engages in the delicate art of giving recommendations to large national and international organisations - without getting involved in the political arena as this is not its role.

BIRA-IASB has a strong international presence, witness the win-win cooperation agreements with Environment Canada, the Institute of Atmospheric Physics and the National Meteorological Satellite Center of China. These are opportunities for BIRA-IASB to optimise air quality modelling techniques. Finally, BIRA-IASB has created links with the Presidency of the Council of the European Union in its space chapter ("Space for the African Citizen" conference on 16 September, favouring the development of cooperation initiatives with the black continent within the framework of the chapter "Africa" of the GMES, and an international conference on space exploration at ministerial level). The aim is to ensure that Belgium becomes a major player in space exploration.

BIRA-IASB aeronomie.be

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