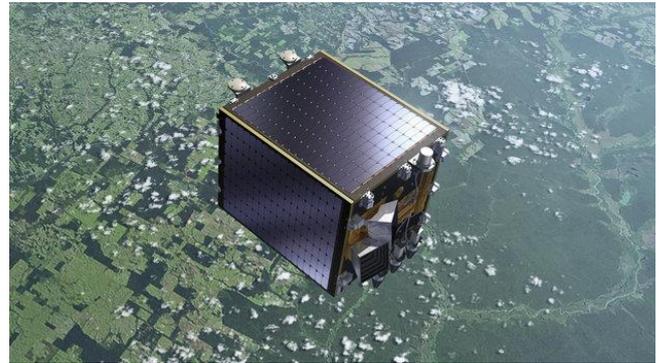




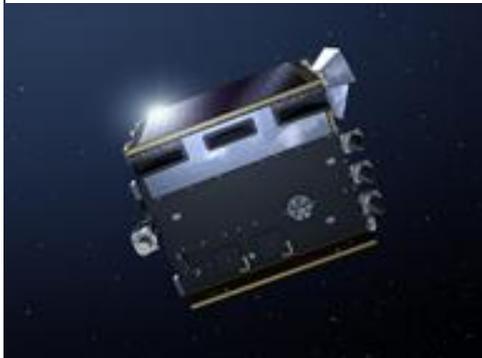
## The PROBA-V satellite is in orbit: another success for NGC Aerospace

On the 6<sup>th</sup> of May 2013 at 22:06, Eastern Daylight Time (EDT), the PROBA-Vegetation (PROBA-V) satellite was launched from the Kourou Space Centre in the French Guiana to begin its remote-sensing mission from a 820-km high orbit. Every second day, the spacecraft instruments will cover the complete landmass of the Earth, thereby generating up to 500 images of the Earth over its 2.5-year orbital lifetime. Three multi-spectral imaging telescopes will gather detailed information on the health of our planet, on its climate and on its vegetation. The vast amount of data will serve in the monitoring of surface water, agricultural land, desertification and deforestation with the objective of securing the supply of food for future generations. PROBA-V will extend the 15 years of data collection from the Vegetation instruments onboard Spot-4 and Spot-5 remote-sensing satellites that PROBA-V will replace. The 140-kg satellite, not larger than a cubic meter, will be placed on a Sun-synchronous orbit that maintains a constant orientation with respect to the Sun, thus ensuring high-quality images. The multi-spectral cameras will operate at a 100m resolution with a 2250-km push-broom swath over the Earth surface.



The Sherbrooke-based high-tech company NGC Aerospace, in collaboration with the satellite prime contractor QinetiQ Space of Belgium, participated in the design and implementation of PROBA-V by providing the *intelligent* software that controls the manoeuvres of the satellite with little or no human intervention. The navigation, guidance and controls algorithms developed by NGC ensure the correct positioning and orientation of the satellite so its cameras point to the terrestrial targets with the accuracy and stability that maximises the quality of the images. The computer software designed by NGC effectively "holds the cameras" while the latter take their pictures of the Earth.

Images: courtesy of the European Space Agency



PROBA-V is the third satellite in a series of mini-satellites mandated by the European Space Agency (ESA) for which NGC contributed its expertise. PROBA-1 was launched on 22 October 2001 on an Earth-observation mission aimed at the analysis of climatic changes. PROBA-2, a Sun-observation satellite, is studying the influence of the Sun activity on our environment since 2 November 2009. Both satellites are still fulfilling their mission and have accumulated almost 15 years of orbital life.

With these satellites, NGC Aerospace made a quantum leap in aerospace technology by creating a new generation of satellites that integrates for the first time on-board intelligence and autonomy in the operation of scientific satellites. These innovations increase the reliability and the efficiency of satellite while reducing their operating costs. The Canadian development of these new space technologies and their realisation on board European space vehicles are made possible by the active Canadian participation in the European Space Agency's programmes under the Canada-ESA Cooperation Agreement and, more specifically, through the financial contribution of the Canadian Space Agency to the General Support Technology Program (GSTP) of ESA.

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**Links:**

- PROBA-V on ESA site: [www.esa.int/Our\\_Activities/Technology/Proba\\_Missions/Proba-V](http://www.esa.int/Our_Activities/Technology/Proba_Missions/Proba-V)
- CSA: [www.asc-csa.gc.ca](http://www.asc-csa.gc.ca)
- NGC: [www.ngcaerospace.com](http://www.ngcaerospace.com)

**NGC Aerospace Ltd** NGC is a dynamic, high-tech Canadian SME, founded in 2001 by its president Jean de Lafontaine and located in Sherbrooke Canada. The company offers analysis, simulation and design services for the guidance, navigation and control (GNC) of planetary exploration vehicles and terrestrial satellites. The company is recognised for its expertise in the cost-effective design and validation of flight software. It is also well known for its development of high-quality GNC systems and software that increase the autonomy, performance, reliability and safety of intelligent vehicles while, at the same time, reducing their operational costs.