

Really sharp

“Really Sharp.” This is how Nicolas Thomas from the Center of Space and Habitability (CSH) of the University of Bern defined the first pictures acquired from the surface of Mars by the CaSSIS⁽¹⁾ instrument flying on ESA’s Trace Gas Orbiter of the Exomars 2016 mission now in orbit around Mars. Those images are the first taken after the successful orbit insertion of the TGO probe around Mars in October. They aim at validating the quality of the instrument and tuning its last parameters before the actual science mission begins.

The first results released by the University of Bern show images better than expected. The spacecraft is working fine and the quality of the optical instrument proved to be excellent. “This is another demonstration of the quality of the optics provided by AMOS.” said Philippe Gilson, its CEO. “It was a challenging project, as most projects in space exploration, but AMOS took up the gauntlet and went through it successfully. “Really sharp” is probably one of the best compliment one can send to an optical system manufacturer.”

More information on CaSSIS images can be found here:

http://www.unibe.ch/news/media_news/media_relations_e/media_releases/2016_e/media_releases_2016/cassis_sends_first_images_from_mars_orbit/index_eng.html

In the same campaign, the NOMAD⁽²⁾ instrument took its first “sniff” of the Mars atmosphere. Ann Carine Vandaele, principal investigator of the NOMAD instrument, was also delighted by the first results: “Our instrument has a detection sensitivity that is improved by several orders of magnitude compared to previous missions.” This confirms that the performance of the diffraction grating provided by AMOS is excellent and that the technology used allows for big leaps in performances compared to technologies used on other instruments. “In such missions, all parts of an instrument have to be of the highest quality and work seamlessly together to deliver outstanding performance. AMOS did its part of the job and proved again that it can be trusted for complex demanding instruments” concluded Philippe Gilson.

More information on NOMAD results can be found here:

<http://aeronomie.be/en/news-press/2016-11-28-nomad-first-results.htm>

More information on the Exomars 2016 mission can be found here:

http://www.esa.int/Our_Activities/Space_Science/ExoMars/First_views_of_Mars_show_potential_for_ESA_s_new_orbiter

⁽¹⁾ CASSIS is a camera that will acquire stereoscopic views of the red planet’s surface. This means that, by taking two images of each scene with a different angle, it will allow to build 3D maps of the surface of Mars. AMOS has manufactured three high precision mirrors that will now start collecting the light reflected by the Mars surface and focus it onto the camera detectors of this instrument.

⁽²⁾ NOMAD is a spectrometer entirely built in Belgium. Its goal is to analyze the Martian atmosphere. At the heart of the instrument is an optical component, called a diffraction grating, which spreads the light into its different wavelengths, like a prism, but with a much better performance. AMOS was in charge of manufacturing and testing this critical component which will allow to better understand the origins and the concentration variations of the various gases present in Mars’ atmosphere, focusing especially on methane in order to try to determine if life is, or has been, present on Mars.

Useful links:

www.amos.be

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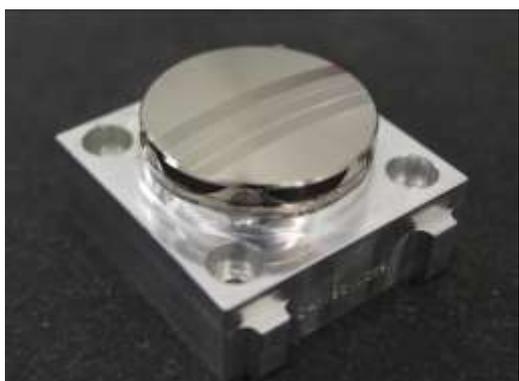
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AMOS in a few words

Located at the heart of the “Liege Science Park” in Sart Tilman, Liège, AMOS has been designing and building high-precision optical and mechanical custom equipment for more than 30 years. Its flagship achievements are professional telescopes, terrestrial or space optical systems, test equipment for space devices, and high-precision mechanical elements. It occupies today more than 100 employees highly skilled in advanced technologies and offers services to the space industry and to the professional astronomy sector.

The company has most of its customers in Europe (ESA, ESO, AIRBUS DEFENCE & SPACE, THALES ALENIA SPACE, OHB), in the United States (AURA), in India (ISRO, PRL, ARIES), and has recently expanded its business in countries like China, Turkey or Russia.



Hyperspectral Imaging Spectrometer for the lunar mission Chandrayaan II of ISRO



Thermo Vacuum Test Facility for VSSC (ISRO)



ATS (Auxiliary Telescope Systems), “mobile” telescopes in the VLTi in Chile (Cerro Paranal)