

EDITO

Is there life on Mars?

This fundamental issue, as much scientific as philosophic, is one of the major questions that SuperCam will have to solve.

How proud we are of having participated in this project! Driven by CNES/IRAP under the command of Sylvestre Maurice, to whom we are very grateful, it has gathered no less than fifteen industrial and scientific structures, and laboratories. A splendid example of French-style success, with a deep involvement of our teams. The signature of a partnership contract between Comat and the « Cité de l'Espace » in January 2021, also represents a big achievement for our communication. In other words, it feels good to do something positive in times like these...

2021 will be the year of space science, with the new Alpha mission of Thomas Pesquet, who will fly back to the ISS Station on the next 22nd of April. Comat will take part in no less than three experimental missions (over twelve) that Thomas will perform onboard the ISS Station.

Microgravity is thriving again at Comat's, thanks to our partnership with CNES. We warmly thank Jean-Loup Cartier, our technical director, who is also in charge of Exploration & Science activities, in which he has been deeply involved for many years.

2021 will also be a decisive year for Telecom and Earth observation activities as well as Smallsats:

- Led by Luc Herrero, **Smallsat activities** are expected to take off thanks to the maturity of Comat's new products, which will meet their markets this year. They include reaction wheels, PJP thrusters, deployable mechanisms, and others in preparation.

- **The Telecom and Earth Observation activities** managed by Nicolas Gauvin are booming thanks to our prime contractors' demand for mechanical equipment to be used in the major on-going programmes (e.g. IASI for METOP, ONESAT, CERES, TELSAT...).

Yes, indeed, there is life at Comat's in 2021.



Benoît MOULAS
Comat Chairman

Mars 2020

Perseverance's touchdown

Comat's teams watched Perseverance rover's touchdown from the Cité de l'Espace in Toulouse and CNES (French Space Agency) in Paris.

The SuperCam adventure began 5 years ago. After a first project of ChemCam camera for the Curiosity rover, the French Space Agency selected us again to manufacture and integrate the SuperCam camera case.

There was therefore much emotion during the unfolding of this evening, when we watched Perseverance and waited for its first signs of "life"...



**MARS
2020**
PERSEVERANCE



Press release

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Spatial

Comat onboard the ISS



Thomas Pesquet's ALPHA mission

Comat is proud of having helped CNES and ESA in their preparation of the Alpha mission for Thomas Pesquet's next flight. Thanks to our know-how, we designed and supplied in record time two experiment equipment:



1. BLOB container

The BLOB container, equipped with four cells watered by an astronaut, filmed at regular intervals. Every cell contains a *Physarum Polycephalum*, i.e. a giant single-celled organism usually called "blob". Its mobility and adaptation abilities have never been explored in microgravity.

With an educational aim, the experiment will be performed in parallel by middle and high schools. The latter will get a development kit that will enable them to perform on ground the protocol applied in orbit.



2. TELEMAQUE pliers

The TELEMAQUE experiment aims at testing in microgravity the contactless handling of small objects through a locked-down ultrasound field. The results will allow to refine the models of contactless command for moving objects in fluid environments. The objective is to derive medical applications such as the removal of kidney stones or the targeted delivery of medicines in the body. Comat developed the acoustic pliers, and the Erms company made the power electronic unit.

Testimonial

French manned flights, which began with the PVH mission in 1982, are already 40 years' old. Missions involving a French astronaut have a considerable impact on the general public in France: Proxima proved that; no doubt Alpha will confirm it. Beyond scientific results (restricted to a few initiates), it is mainly the dream to explore that drives thousands of people to follow Thomas Pesquet's experiments within the ISS. Behind French cosmonauts/astronauts, a small team has been carrying this French dream for decades. Comat belongs to this team!

Cooperating with CADMOS since the beginning, Comat's and CNES's histories are connected and never split up. CNES is the leading European designer of experiments in microgravity. We owe it to you Comat, thanks to your know-how, skills, knowledge of the International Station environment, and above all, to your adaptability. I sincerely thank you for this cooperation that has developed into friendship over the years. More than others, manned flight missions write the great history of space exploration; this history is yours as well.

Be proud of it!

Sébastien Barde

Deputy Director of Science and Exploration at CNES



KUBIK incubator/cooler developed for ESA

KUBIK celebrates in 2021 its 17th year in orbit. This biological incubator/cooler designed by Comat for ESA has successfully performed more than 40 experiments in the ISS. Nine models were built, and two models have been permanently in use in the ISS since 2004. KUBIK's compacity (length 37cm), centrifuge, operability from ground, and modular concept, make it perfectly suited to experiments on small animals, cells, tissues, bacteria, plants and algae. KUBIK has been part of the Columbus infrastructure for several years. Within the scope of the BIOREACTOR initiative, it is now open to experiments from private customers.



Product sheet

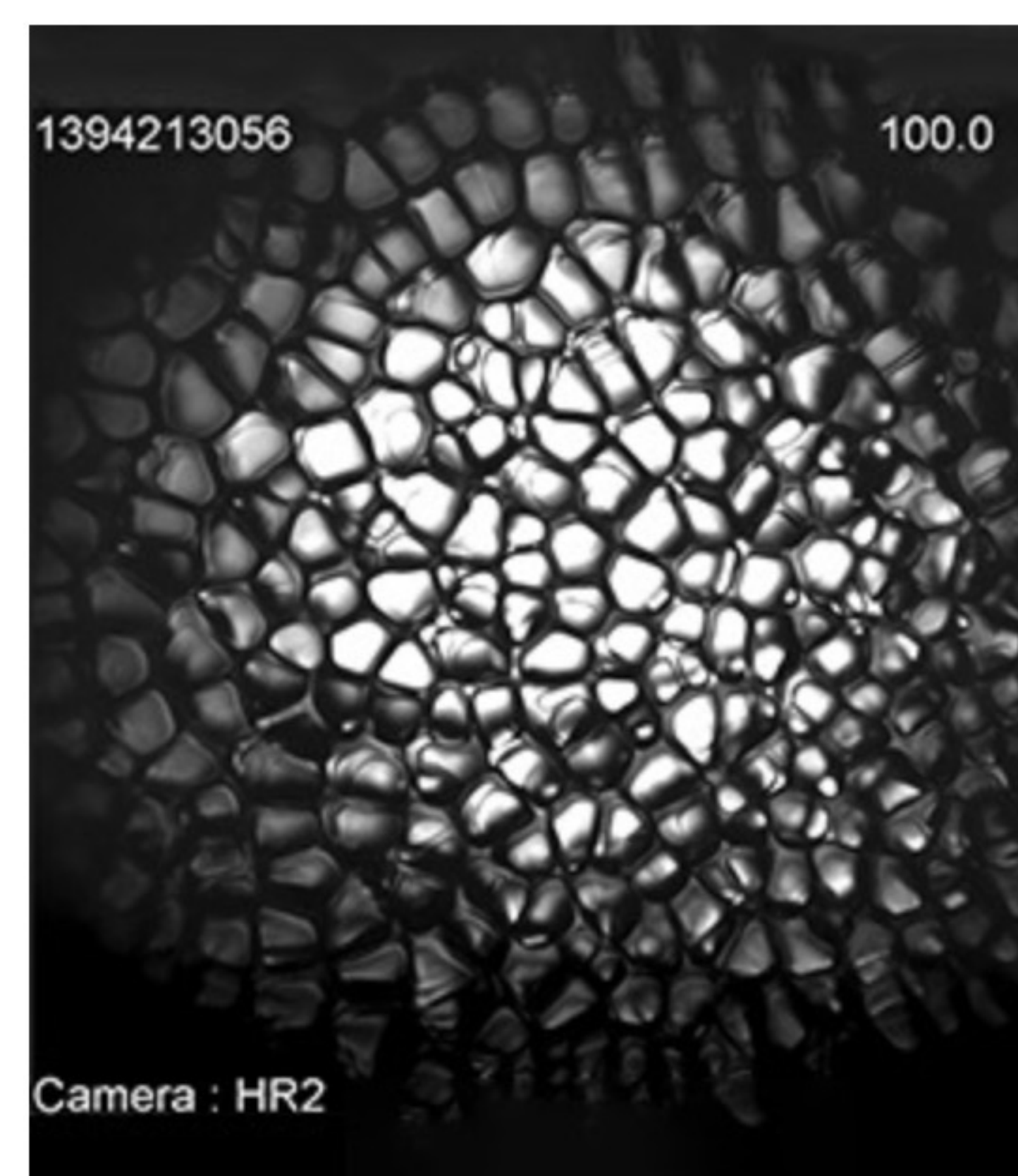
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DECLIC mini-lab

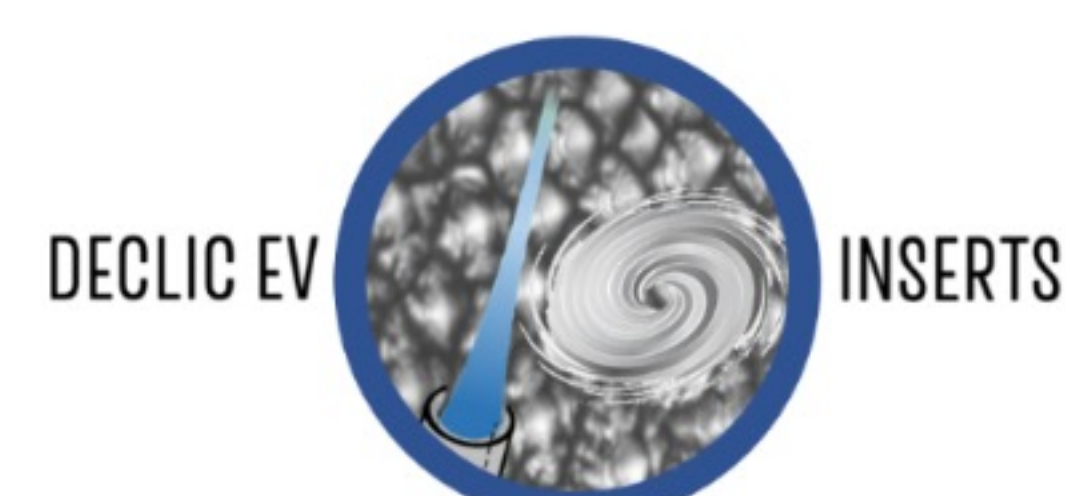
DECLIC (Dispositif pour l'Etude de la Croissance des Liquides Critiques) i.e. Device for the Study of the Growth of Critical Liquids, is a space multi-user mini-lab, dedicated to the study of the behaviour of transparent environments in microgravity, on board the International Space Station.

Developed by Comat, DSI is an insert implemented within the DECLIC device in order to study the solidification of transparent alloys.

Comat is currently in charge of maintaining the EXL (DECLIC optical drawer), enhancing the DSI insert to add new functions, and studying the feasibility of a new AEROSOL Insert aimed at studying aerosol evaporation, condensation and nucleation dynamics in microgravity.



Picture of the solidification experiment within DSI, taken by DECLIC



Contract

Comat signed a partnership with Venture Orbital Systems start-up

Venture Orbital Systems and Comat announce a partnership on a deployer for nanosats & CubeSats.

This deployer will be used starting from 2024 on Zephyr, VOS' nanolauncher. In the meantime, it will be provided to Astreos, a new subsidiary of Venture Orbital Systems offering launch brokering services to CubeSats & nanosats operators.



From left to right: Nicolas Dolin, Business Developer (Comat) – Stanislas Maximin, CEO (VOS) – Ludovic Daudois, CEO (Comat) – Clémence Cambourian, Head of Operations, Sales & Strategy (VOS) – Benoît Moulas, Chairman (Comat)



Press release

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PRESS

They talk about us:



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