



European Space Agency

ESA LONG TERM STORAGE (LTS) WORKSHOP

INTRODUCTION



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Acknowledgements: MPTB splinter group



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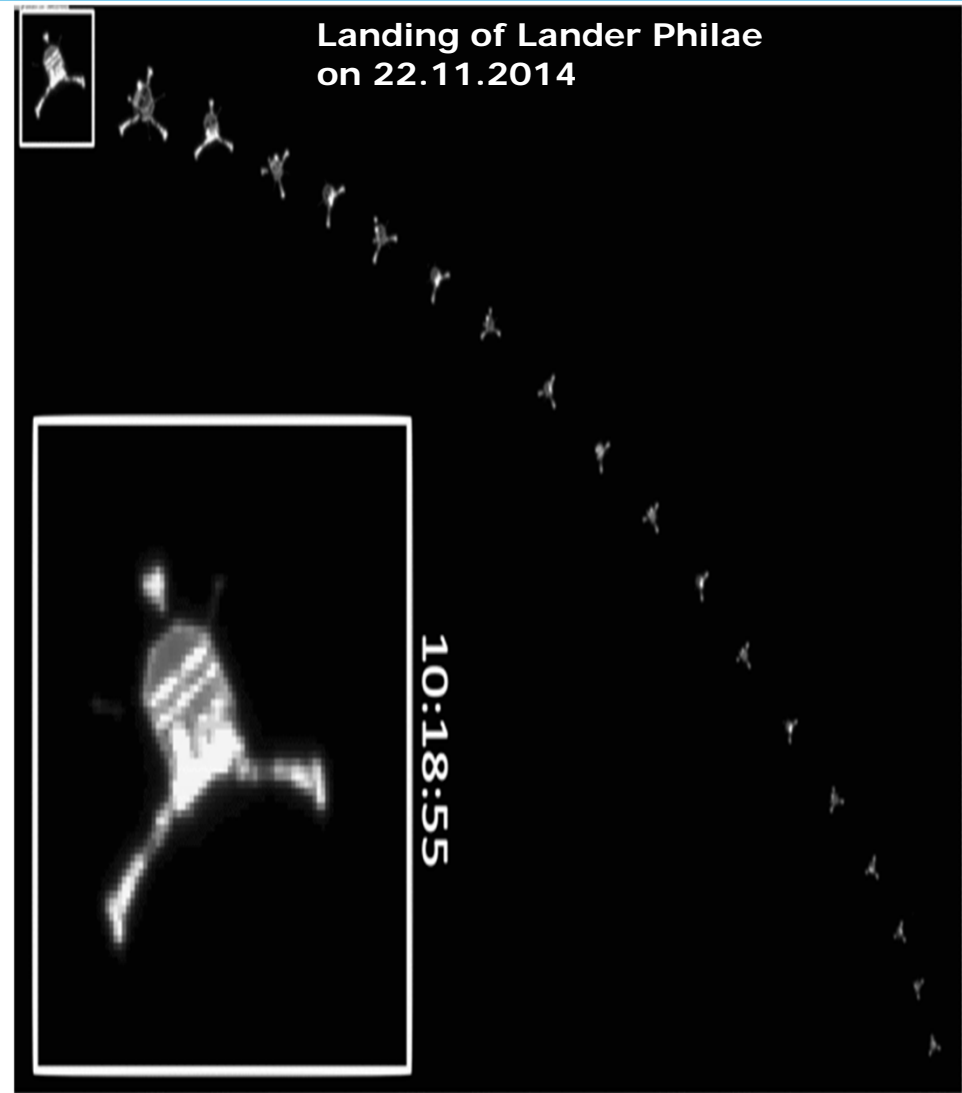
ROSETTA / HIBERNATION / LANDING OF PHILAE / FIRST RESULTS



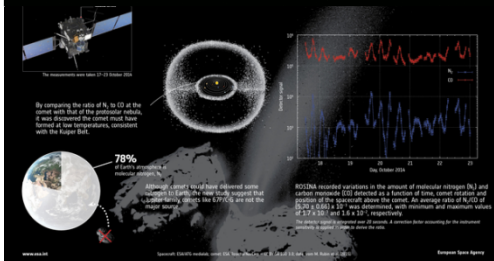
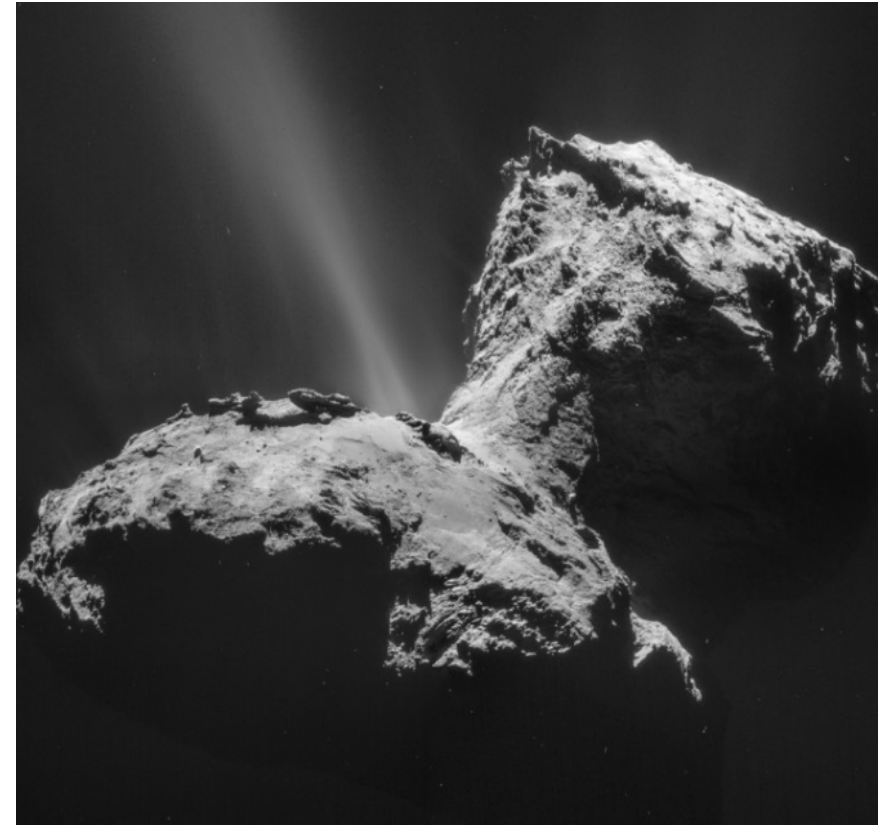
WAKE UP FROM HIBERNATION on
20th January 2014 @ 10:17 hrs



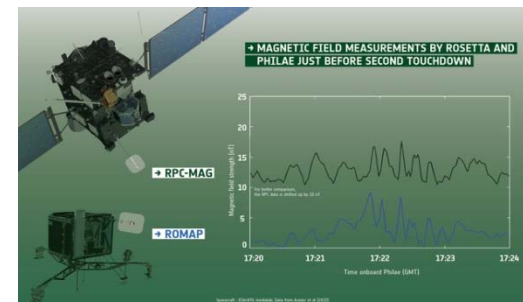
Landing of Lander Philae
on 22.11.2014



67P/Churyumov-Gerasimenko Images of August 2015



Rosetta is today orbiting the comet with 1m/s, Approx. 20 km away.

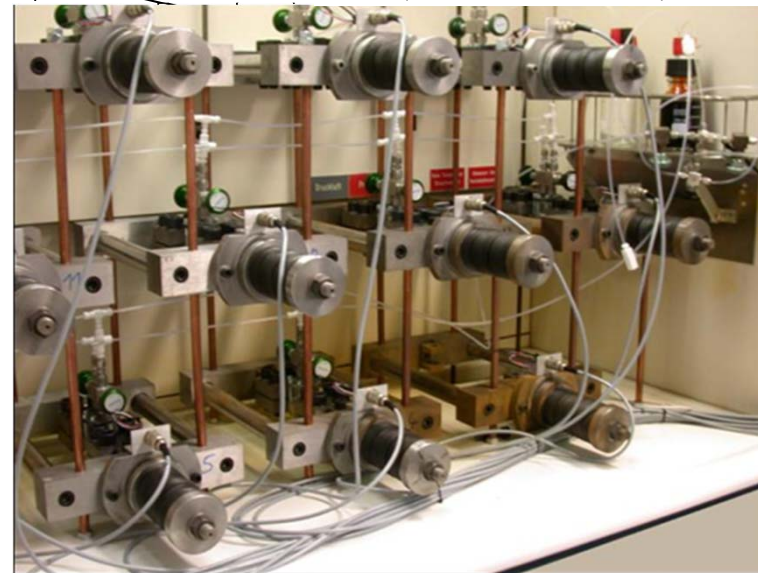
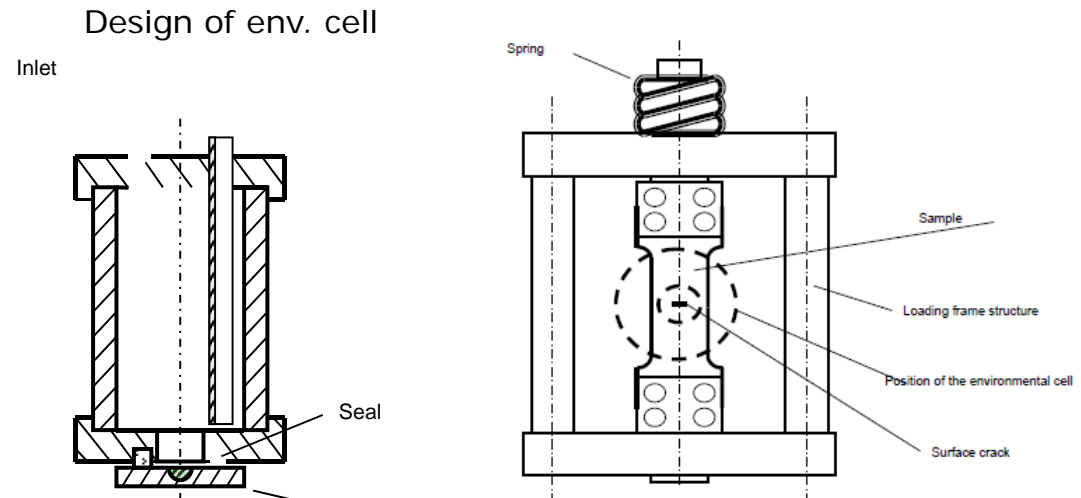


- **FAQ:**
- **http://www.esa.int/Our_Activities/Space_Science/Rosetta/Frequently_asked_questions**
- **When was the launch, and why the long launch delay?**
Rosetta was launched on 2 March 2004 atop an Ariane 5 G+ rocket. It had initially been planned to send the probe into orbit in January 2003. However, the Ariane 5 was grounded following the inaugural failure of Arianespace's new high payload Ariane 5 ECA, on 11 Dec 2002, depriving Rosetta of its launch opportunity to the comet Wirtanen.

ROSETTA: Launch Delay Impact: Tanks



1. For MON filled tanks the unknown of resistance of the tank material to SCC was noted.
2. Test programme was initiated with several configurations of propellants and metal/weld interfaces.
3. The susceptibility to SCC for MON / Ti6Al4V was found for the current systems acceptable, however no off-loading was performed.



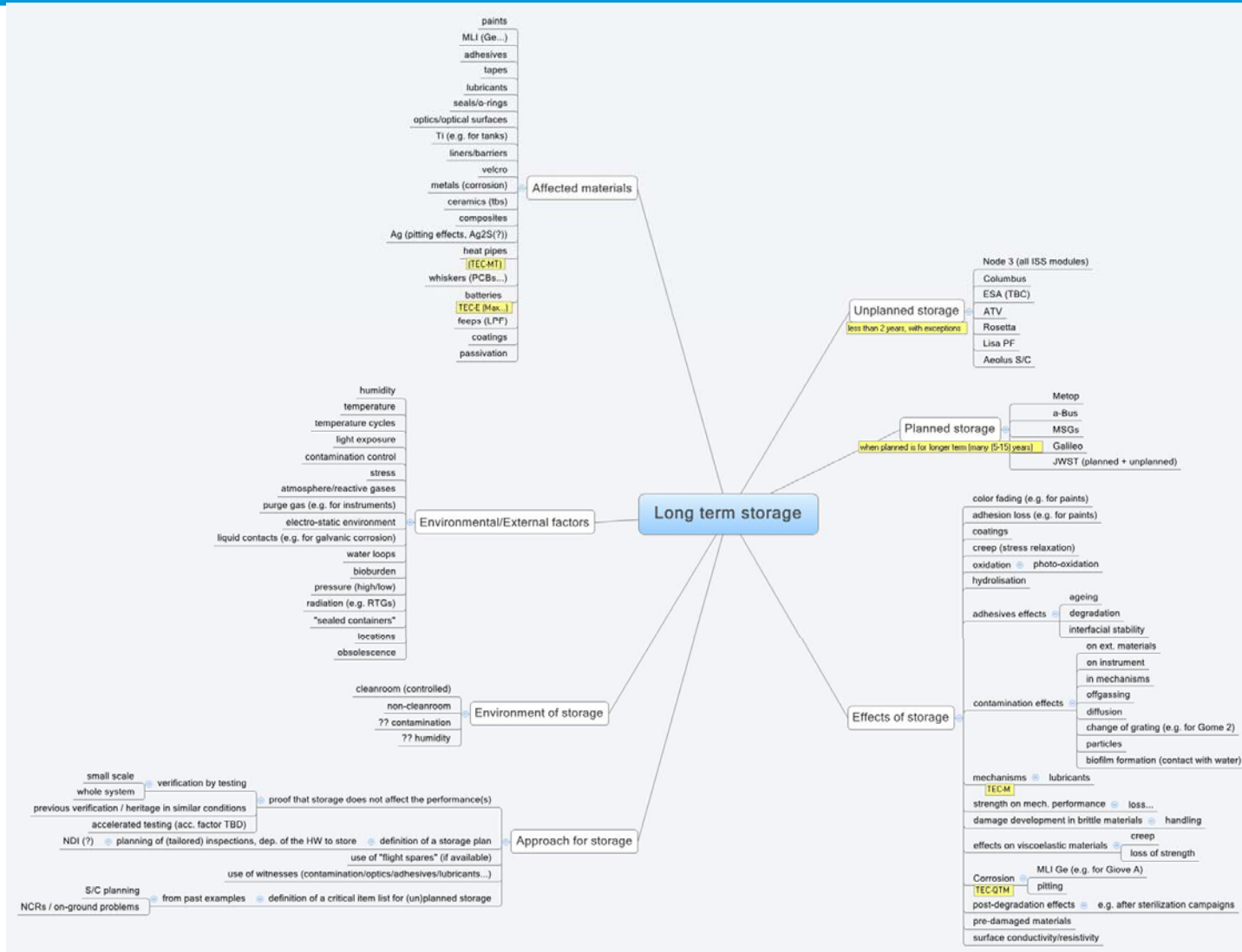
Source:

G. Bussu et al., 2004, ESA-SP-555

G. Bussu, Ghidini, 2005

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LTS: Brainstorming session





Getting a grip on LTS

Do we have a shelf life on s/c ?

How can we control and/or extend it?

What is the risk?

LTS for space programmes – MPTB meeting in November 2015



Organise **workshop / round table** discussion on long-duration storage

Subjects could cover:

- Share experience of long-term storage effects on materials
- Lessons learned from past programs (e.g. MSG, MetOp, ERA (personal LTS inspection in 2007!))
- Approaches in non-space industry (e.g. aviation, automotive)
- Needs for new programs (e.g. MTG, MetOp-SG)
- Compare test methodologies for accelerated ground testing
- Compile best practices for long-duration storage
- Definition of follow-up R&D activities

Target date Q1/Q2 2016 at ESTEC for 1 day

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=> let's start the day !