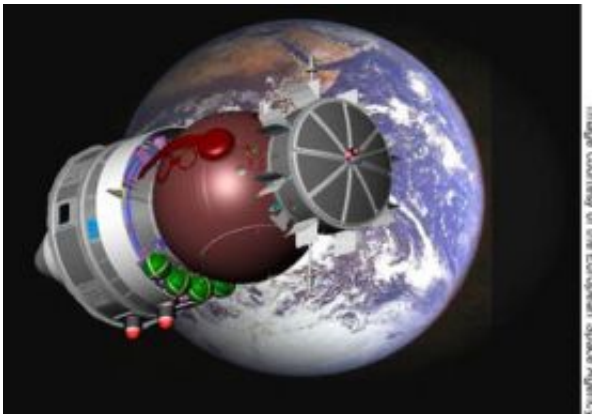


# Can meteorites carry primitive life from one planet to another?

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An academic from the University of Aberdeen will be one of more than 60 scientists and technicians preparing for the European Space Agency's Foton M3 mission next month.

Scheduled for launch on September 14 from Baikonur Cosmodrome, Kazakhstan, the unmanned Foton M3 mission will carry 35 ESA experiments in life and physical sciences, including a rock experiment designed by Professor John Parnell, Chair in Geology & Petroleum Geology, from the University of Aberdeen.

The Foton capsule will spend 12 days orbiting the Earth, exposing the experiments to microgravity, and in the case of some experiments, to the

harsh environment of open space, before re-entering the atmosphere and landing in the border zone between Russia and the Kazakhstan.

Many planetary scientists now believe that meteorites can carry primitive life from one planet to another. Some suggest that life on earth may have come in this way from Mars. But, could organic material in a rock survive the heat of entry into the earth's atmosphere?

Professor Parnell is investigating this theory and will look at what happens to a rock sample from Orkney during re-entry into space. He explains: "We are due to send a piece of Scottish rock, which is from Orkney, into space next month (Friday, September 14), attached to a Russian spacecraft.

"The objective behind this is to look at the rock's behaviour when it is exposed during re-entry through the Earth's atmosphere - when temperatures are extreme. This will tell us something about the likelihood of life being transferred between planets on meteorites.

"The Orkney rock is a very robust material but it will be interesting to see if organic matter in the rock is robust enough to survive the harsh conditions endured during re-entering the Earth's atmosphere."

This is the first time ever that the Scottish scientists will be able to look at the effects of heat in terms of molecular fossils. In another related experiment Professor Parnell and Dr. Stephen Bowden hope to gain a greater understanding of the preservation of molecular fossils through heating meteorite impacts.

The Orkney rock has been sent to Vienna to be specially sculpted to the right shape (about the size of a bowler hat) and was then attached to the side of the Russian spacecraft. The choice of Orcadian rock is an ideal material to send into space because it is organic-rich, is extremely hard

and robust, and can also be used as a target for impact cratering experiments.

Ahead of next month's spacecraft mission, Professor Parnell will be enthralling attendees at this year's Orkney International Science Festival which begins at the end of this month (August 30 to September 5). He will describe how a Russian spacecraft and a rock from Cruaday Quarry may soon provide the answer to whether meteorites can carry biological matter from one planet to another. Professor Parnell will deliver his presentation entitled Journey through Space to a large audience of Orcadians and visitors to the islands.

Ahead of the Festival, Howie Firth, Festival Director, said: "I'm delighted that an Orkney audience will be able to hear at first hand about the plans to send a piece of Orkney rock into space next month. There's tremendous interest in Orkney in all aspects of the story of the islands, and the fossils of Cruaday Quarry are particularly fascinating.

"We owe a lot to Leslie Firth, who owns the quarry, for all the work he has done in looking after the fossil beds and providing information about them through the development of the Fossil and Heritage Centre. It's excellent to think that a rock from Cruaday will now be the focus of an experiment which may provide a clue to the origin of life on earth."

The Orkney International Science Festival, now in its 17th year, brings together annually scientists from around the world to cover a wide spectrum of topics. Details of this year's programme can be found on the Festival's website [www.oisf.org](http://www.oisf.org)

Festival topics this year will range from quantum theory and cosmology to food innovation and film-making. Professor Parnell will be speaking on Friday, August 31 at 5.15 pm.

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