

ROSETTA MAY REVEAL OUR COSMIC ANCESTRY



Timeline - 12 November 2014 - Today's landing on a comet has been hailed as a one big step for civilisation. The importance of this epoch making achievement and its potential for unravelling our origins cannot be overstated. The scientific theory that comets are connected with the origins of life was first developed by the late Sir Fred Hoyle and the present writer from 1980 onwards, and evidence for this point of view has grown steadily over the years. Today it is widely accepted that at the very least the chemical building blocks of life were delivered to the Earth by comets, and this process effectively kick-started the evolution of life on our planet. At the time of the first space mission to a comet in 1986 - ESA's *Giotto* Mission to Comet Halley - the prevailing point of view was that comets were lifeless inorganic snowballs. Weeks before the *Giotto* encounter on March 13, 1986 Fred Hoyle and I published a prediction that the surface of the comet would be "darker than coal" and this prediction was reported in the *London Times* of March 12 1986. On the night of March 13 it turned out that our prediction was startlingly verified when, to the dismay of everyone, the comet did indeed turn out to be so dark as to be virtually invisible to the heavily shuttered-down cameras that had expected to photograph a bright snowfield. Comet Halley was indeed blacker than the blackest coal; and the largely organic composition of comets have come to be steadily vindicated since this time. The dark surface of comet Comet 67P/Churyumov-Gerasimenko (Comet C-G for short) has already been established and no doubt will be confirmed in the weeks that lie ahead.

The lander *Philae* that arrived safely on Comet C-G carries a mobile laboratory that will hopefully give us a better understanding of how the solar system originated nearly 4500 million years ago. But what further evidence of our cosmic ancestry will be eventually unravelled by this mission is left to be seen. It is somewhat strange that references to life in comets appear to have been somewhat muted in the publicity covering today's event. My prediction would be that the connection between life and comets would be the most exciting outcome that will emerge in due course.

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