## EVIDENCE OF ALIEN LIFE DOWNGRADED OR DENIED

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*Abstract*: A rapidly growing body of evidence supports the idea that extraterrestrial microbial life exists, but the societal acceptance of such evidence appears to be hindered by deep-rooted cultural prejudice. There are hints that a major paradigm shift is in sight.

"There are none so blind as they who will not see."

It is permitted nowadays to assert that comets and meteorites delivered the *chemical building blocks of life* to form a primordial soup from which life originated on the Earth some 4 billion years ago. 37 years ago when Fred Hoyle and one of the present writers made the same assertion we were roundly criticised<sup>1</sup>. Such societal condemnation soared to its highest level when we asserted, after examining the molecular complexity of living systems, that an origin of life on the Earth was highly improbable, and that it was preferable to consider life (at a bacterial and genetic level) arising in the biggest available cosmic setting. Life, on this picture, was supposed to be a truly cosmic phenomenon<sup>2</sup>.

From the turn of the millennium an impressive body of evidence has accumulated to indicate that microbial life does indeed exist outside the Earth<sup>3,4</sup>. The data straddles many scientific disciplines, and perhaps for this reason it has tended to be regarded with suspicion in some circles. Evidence includes the studies of microfossils in cometary dust and meteorites, investigations of interstellar dust, geochemistry of the oldest rocks, genome sequencing studies and also the most recent explorations of Mars. When individually and separately considered some of this data may be regarded as mere "indicators of life" but not decisive proof. Collectively, however, the case for life being a cosmic phenomenon appears to be overwhelming<sup>5</sup>.

The recent isolation of biological entities in the stratosphere by M. Wainwright et al<sup>6</sup> adds to the body of data showing the presence of life in cometary debris. Studies of comet 67P/C-G show a preponderance of organic molecules consistent with biology as well as a variety of biofriendly niches near the surface<sup>7,8</sup>.

The totality of available data is now strong enough to reach the conclusion that alien life exists in our vicinity in considerable quantity and, moreover, that such life continues to reach the Earth. It is possible that there is even more compelling data in store that has not yet been ushered into the public domain.

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Why then, one may ask, is a full and ungrudging acknowledgement of the existence of extraterrestrial life being withheld? The answer turns on the human weakness that we are reluctant (on all matters) to admit that we were wrong. We have discussed this phenomenon at considerable length in our earlier paper<sup>6</sup>. The idea of life originating on the Earth "in some primordial soup" is deeply rooted in the religious and scientific culture of the Western world. It has prevailed since the Middle Ages, and robustly persisted to the present day. Although Eastern societies (with Hindu and Buddhist philosophies) are more open to the idea of life being a cosmic phenomenon, all too often scientists in these countries tend to pay lip service to their Western counterparts.

The most vocal opponents of extraterrestrial life continue to assert that the "alien life theory" has been "disproved". In making such a statement they do not seem to have a grasp of the nature of "proof" as in mathematics, nor do they appreciate the difference between "disproof" and "lack of proof". Whenever evidence pointing to alien life is presented a faceless crowd seems to spring from behind ever ready to attack. Infidels are not permitted it would seem in our modern world. The value of fostering a diversity of opinion in relation to matters of the intellect, which is a prime condition for progress, has all but vanished.

In this connection it is heartening to read reports on the internet that Pope Francis, on the advice of Papal Astronomer Brother Guy Consolmagno, has accepted the possibility of alien life<sup>9</sup>. The supportive arguments given refer to the current estimates of habitable planets exceeding 100 billion in the Milky Way alone; and it appears that the Vatican is even willing to consider seriously an abundance of sentient life in the galaxy! If this marks a real change of heart on the part of the Vatican, it may turn out that they will be trail bearers for the rest of the world.

In conclusion we note that with the rapidly growing evidence that all points to the existence of extraterrestrial life it would be unwise to ignore the facts. Wrong ideas have crippled science in the past. If we are not vigilant it could happen again, and this time round the societal and economic consequences could be more disastrous.

## References

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