



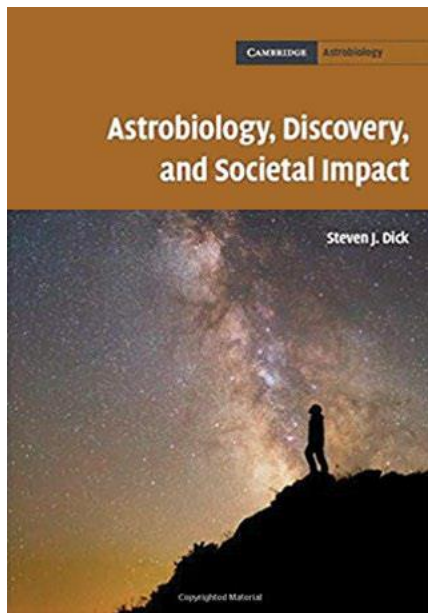
BIROn - Birkbeck Institutional Research Online

Crawford, Ian (2018) Aliens and us. [Book Review]

Downloaded from: <https://eprints.bbk.ac.uk/id/eprint/54746/>

Usage Guidelines:

Please refer to usage guidelines at <https://eprints.bbk.ac.uk/policies.html> or alternatively contact lib-eprints@bbk.ac.uk.



Aliens and Us

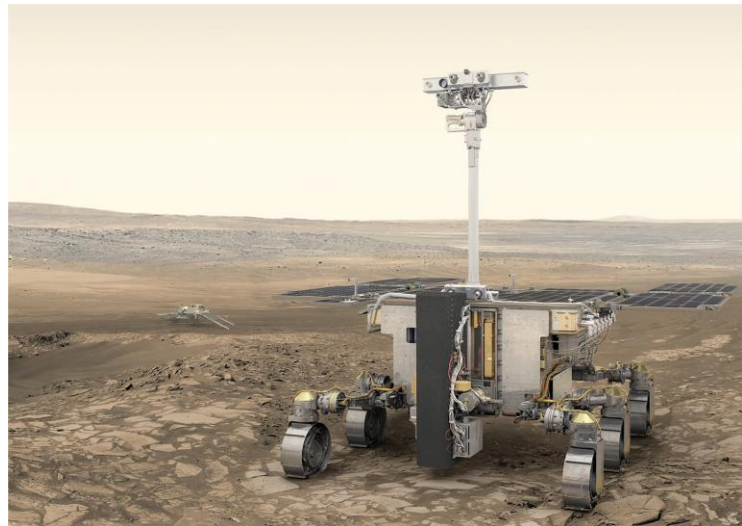
A review of

Astrobiology, Discovery, and Societal Impact

By Steven J. Dick, Cambridge University Press, 2018.

Published in *Nature Astronomy*, vol. 2, pp. 933-934 (2018)

Determining the prevalence, or otherwise, of life in the universe is among the most profound unresolved questions of modern science. Although speculated about for millennia, over the last several decades advances in space exploration and astronomical instrumentation have enabled the search for extraterrestrial life to evolve into the modern empirical science of astrobiology. Although the ultimate objective of its quest remains elusive, astrobiology has in fact made significant progress, from the discovery of past habitable environments on Mars, to the recognition that many planets orbiting other stars may have habitable near-surface environments. Given this rate of progress, if life is common in the universe we may expect to learn of it within the coming decades (for example, the ExoMars rover, pictured, will search for signs of life on Mars in 2021). And, of course, if technological civilisations are common in the Galaxy a signal might be detected at any time.



The scientific impact of such a discovery can hardly be exaggerated, but what about the wider social and cultural impacts? This is the aspect addressed by

Steven J. Dick, a former Chief Historian of NASA and previous holder of the Baruch S. Blumberg Chair in Astrobiology at the Library of Congress, in his new book: *Astrobiology, Discovery, and Societal Impact*. Dick is uniquely placed to consider these issues, having published widely on the topic for many years, and has organised numerous interdisciplinary meetings and workshops specifically to address the societal impacts of contact with extraterrestrial life. This book provides a valuable distillation of his thinking.

The book is divided into three parts. The first part analyses historical analogues for the discovery of extraterrestrial life to see if lessons can be learned regarding the likely societal impact. Dick begins by examining public reactions to historical cases where, temporarily at least, it appeared that extraterrestrial life might actually have been discovered. Examples include the Orson Welles' infamous radio production of *War of the Worlds* in 1938, the discovery of pulsars in 1967, and the claimed evidence for fossilized microbes in the martian meteorite ALH84001 in 1996. History also provides some examples of the entirely unexpected discovery of new forms of life on this planet, most notably the discovery of micro-organisms in the 17th century. In addition, there are well-documented examples of different human cultures coming into contact with each other, such as the discovery of ancient Greek civilisation by medieval Europe and the less happy clash of European and Mesoamerican civilisations in the 16th century, which might give some guide to the consequences of contact with extraterrestrial technological civilisations.

It has to be said that the results of this historical analysis turned out to be inconclusive. Indeed, the tentative conclusions that Dick was able to draw seem rather predictable, namely that the societal impact of the discovery of alien life is likely to depend on its nature (e.g. microbial vs. intelligent), distance from us (e.g. on Earth itself, in the Solar System, or around a distant star), the extent to which such a discovery may be expected in advance (and thus society prepared for it), and the manner in which news of the discovery is disseminated by the scientific community, political institutions and the media. Dick notes that many of these issues have been explored in the science fiction literature, and I was delighted to see that this extensive body of often very original thought is given due prominence in his discussion.

In the second part of the book, Dick addresses several unresolved philosophical issues, mostly in the context of contact with extraterrestrial intelligence (ETI). For example, he asks if human knowledge is sufficiently universal for us to communicate with ETI, and stresses that our very definition of 'intelligence' may prove to be hopelessly anthropocentric. If ETI perceive the universe in completely different ways, mutual understanding may be impossible. On the other hand, any ETI detected by us will necessarily have evolved within the same physical universe, so some common frames of reference may exist to facilitate communication. Dick here makes the interesting, and as far as I know original, suggestion that a comparison between human and alien worldviews would shed empirical light on a range of philosophical and ethical speculations. For example, if all ETI were found to adhere to similar ethical rules (e.g. the 'Golden Rule' or Kant's 'Categorical Imperative') this might constitute empirical evidence for the universality of such rules. Of course, the reverse is also true, which might cause existential problems for some human religions and philosophies.

This brings us to the third part of the book where Dick examines the wider cultural, ethical and political impact of discovering extraterrestrial life. He argues that under the combined influences of astrobiology, space exploration (especially images of Earth taken from space) and popular science fiction, humanity is moving towards what might be called a 'cosmological worldview' where we see ourselves as integral components of the universe rather than as somehow separate from it. I agree that it would be highly desirable for humanity to develop such a worldview, not least because it would help counter the tide of populist nationalism and religious fundamentalism with which we are currently afflicted. I think Dick overestimates the extent to which this perspective has penetrated popular consciousness, but I agree with him that the discovery of extraterrestrial life could change this profoundly. Suddenly we would have to face the fact that we are not alone in the universe, and this would very likely strengthen cosmological perspectives and, hopefully, stimulate some much-needed cosmopolitan thinking.

This wider perspective raises interesting questions of political accountability. As Dick asks several times, but is not able to answer satisfactorily, who "speaks for Earth" in a cosmic context? At present, we do not have international political institutions which could legitimately speak for humanity on issues such

as protecting indigenous microbes on Mars or responding to an alien radio signal. Given that discovering the former may occur within decades, and the latter could occur at any time, Dick argues, I'm sure correctly, that much more attention needs to be given to preparing society for discoveries that may sound like science fiction today, but which could become very real at any moment.

This book is a scholarly, well-referenced, introduction to the many social and cultural consequences of discovering extraterrestrial life. If it doesn't come to any definitive conclusions that is hardly the fault of the author – only if and when we actually encounter alien life will we learn just how robust, or otherwise, human society is to such an epoch-making discovery.

Reviewed by Ian Crawford

Ian Crawford is a Professor of Planetary Science and Astrobiology at Birkbeck, University of London; e-mail: i.crawford@bbk.ac.uk