Alien Visitors Theory
is out of this world*

By Tong Tang

Is the Earth receiving extraterrestrial visitors? This is a billion-dollar question, as recent media events show.

And I have to admit to having performed academic research into the topic, without harm to the public coffers in Hong Kong, I hasten to add. The studies were conducted abroad. Thus my own claim of some qualification to join in the debate, in public, in the interests of Hong Kong's taxpayers.

And my arguments depend on how big is a billion, in the right context. Exactly how these come about will be made clear below.

Now, one approach to the question is to examine critically the historical evidence for extraterrestrial visitations. This takes care and technical expertise, but the public is not much interested in negative conclusions on individual cases. Alternatively, one may generalise. Fortunately, after we cross the forefront of human knowledge into the realm of human ignorance, logic remains a tool at our disposal.

Allow me, thus, to proceed first with hard scientific induction, then with deductive arguments. Even more fortunately, in this particular case, as we shall see, pure logic has a lot to say. For once, Plato was right!

Can it be that the Earth is being frequented by aliens from beyond space?

Maybe they are from somewhere within our own solar system? To the second, more specific question first, my answer is no.

Well, it is not impossible that one or more of our neighbours harbour some lowly and sturdy lifeforms; the two Vi-king spacecraft that landed on Mars failed to either demonstrate or reject biological activities there.

However, millions of telescope-hours of visual and spectral observations on planets as well as associated satellites, augmented by measurements onboard fly-by or soft-landing probes like the Venera series and the two Voyagers, rule out any tell-tale trace of intelligent beings or their artifacts. So an extant or even extinct civilisation, if any, is or has been necessarily of "Type 0", namely one with little technological activity and therefore incapable of travelling to Earth, itself a budding "Type 1", that is, humans are attaining the technological level of controlling — and polluting — the whole planet.

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(Type 2's utilise the entire resources of their home stars.)

What about from other solar systems? Sure, we have studied in any detail but a tiny, tiny faction of the stars out there. Nevertheless, my answer is again no, based on logic.

Stars exists in "astronomical" numbers. There are approximately one followed by twenty-one 0's of them, as far out (or back) as we can see with different types of telescopes, based on statistical star count. Is this a large number? My criterion may sound all too obvious: a number is large when other relating quantities are smaller.

The fact may not be. For instance, in the context of global air pollution, the number of molecules in any ordinary amount of matter is large.

Whilst the number of breathing volumes in the entire Earth's atmosphere seems enormous, should the molecules in but a single breath from your favourite actor or actress spread out evenly over the world, you would get hold of some millions of his or her air molecules when you inhale next.

Well, the number of stars is large because the total population on our Earth, enormous though it may be to many of us, is smaller. The significance of this will strike home below.

Moreover, no real barriers divide the stars. Well, stars range near and far, but once you become capable of reaching the nearest neighbour, you may journey to most others soon enough, on the timescale of stellar lifetimes. Perhaps a spaceship may speed along by compressing spacetime in front while expanding it behind!

Even if interstellar trips must take time, that available is more than ad-equate, we being, a latecomer to the universe, whose age far, far exceeds the time taken by a Type 1 civilisation to develop on Earth.

Mental or material resources for inter-stellar explorations are little constraints, because Dyson's (self-replicating) probes can be sent!

Given that in the context of making contacts stars are numerous and accessible, the fact that the Earth is not being swamped with extraterrestrials day and night must then mean one of two possibilities: that few of the stars have technological civilisations in orbit, or that physical travels among stars occupy but a brief epoch in the development of typical civilisation in the universe, hence by the laws of averages few spacefaring civilisations are near in space or time.

It then follows that none is physically visiting us, because, again by the laws of averages, as one among the 1,000, . . .,000 we cannot be the object of attention for a few spacefarers. The sheer magnitude in the number of independent origins demand either many arrivals or none, but not in between.

How many is "many"? Whilst our home planet's population seems enormous, should artifacts from but a minute fraction of the 1,000, . . .,000 stars come here once in a long while, the frequency per location on Earth would be high enough that virtually all observing (and talking) adults would have seen one or more within their lifetimes.

Such an extreme scenario could not be asserted by UFO zealots, not even by those who admit to regular sex with aliens (yes, there are such), because they can say what they have seen but not what others have. Then, logic denies aliens from space.

It is like that we, some primitives on an island, have just discovered that numerous other islands surround ours, yet for one whole summer few of us claim having met any tourists. Were there people of all sorts on different islands, not every-body would be travelling by jets and unknown means but at least some should be "visible", touring on foot, so either these islands are essentially uninhabited, or all civilised people communicate on the Internet!

Thus, the debate on extraterrestrials visiting Earth has little scientific relevance. But it is an interesting social phenomenon. When people find worldly lives uncertain or unhappy, they accept out-of-this-world explanations more readily. A survey on the public opinion regarding this and the like of super "chi kung" may provide, therefore, an index of social contentment for Hong Kong! (Charge the expenses to the taxpayers?)

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