The emergence of a new corona virus – a possible space connection?

The sudden outbreak of a new coronavirus (nCoV) causing a large cluster of pneumonia cases first in the Hubei province of China and shortly afterwards over a wider area, in our view, point tantalisingly to a space connection. The connection could have taken the form of a highly localised cosmic ray-induced mutation event on an already circulating virus in Hubei, or, more likely, in our view, to a new infective agent external to Earth settling through the atmosphere in a clumpy way and possibly hybridising or recombining with a preexisting strain of coronavirus. A link to snakes in a Wuhan market has been suggested but such a causal connection still remains tentative. If a link with such animals is indeed to be justified we need to understand why it manifested so suddenly, unless the animals (snakes) recently became the recipients of a new or mutated virus. An alternative view is that the new viral outbreak followed the pattern of other similar recent outbreaks – SARS, MERS, *Candida auris* – strongly pointing to a space connection[1,2,3]. As of the end of January 2020 well over 500 cases of nCoV were confirmed and these are now distributed over a considerable area of the Chinese mainland. (See Figure 1).

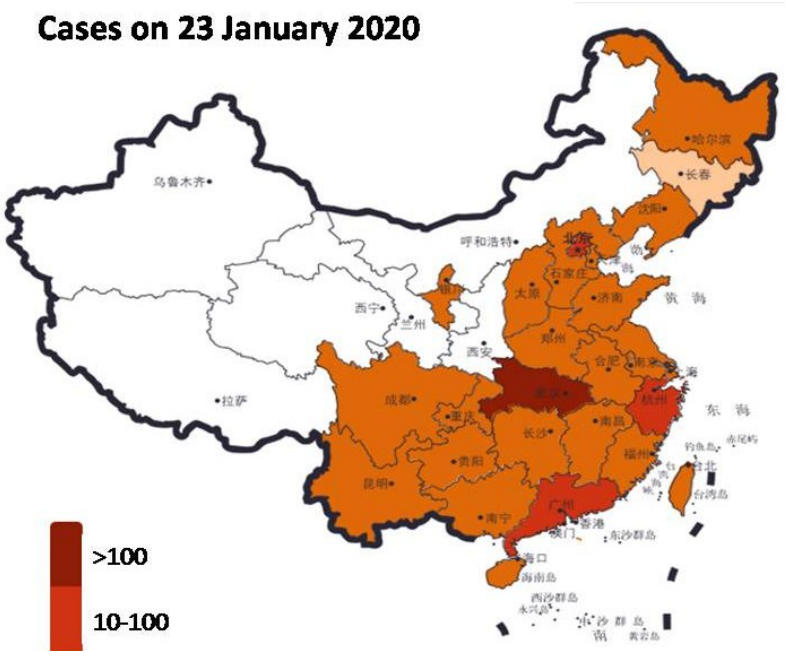

Figure 1: Distribution of Cases

For a cloud of micron-sized particles introduced to the Earth from space its deposition at ground level is expected to be patchy in regard to both time and place. It can be estimated that a cloud of 1 micrometre radius clumps of bacteria/viruses incident from space reaching the equatorial tropopause (~ 20km) settles gravitationally over a timescale of 1-2 years[4,5]. Numerical modelling shows that the preferred first landfall for particles in such a cloud of dust tends to be located somewhere in China because the Himalayan Mountain range essentially punctures a hole through the troposphere. In such a picture there will inevitably be a *particular* location (dark brown in Fig.1) of first descent followed by randomly distributed depositions thereafter.

Many recent pandemics of viral disease, including influenza and SARS, are known to have followed a similar pattern of behaviour and a number have indeed first appeared in China[5]. Following the initial deposition in a small localised region (eg Wuhan, Hubei province, China) particles that have already become dispersed through the troposphere will fall to ground in a higgledy-piggledy manner, and this process could be extended over a typical timescale of 1-2 years until an initial inoculant of the infective agent would be drained. This accords well with many new strains of viruses including influenza that have appeared in recent years[5]. In the context of the new coronavirus subsequent cases outside China that have appeared so far appear to be confined to persons travelling from the infected provinces of China. There appears to be little or no evidence of person-to-person transmission except in instances of close contact.

We conclude by noting that we expect the pattern of further global spread of the new coronavirus (nCoV) to follow a similar trend until a high level of person-to-person infectivity might possibly over and the virus then acquires the status of an endemic virus. It is prudent that Public Health Authorities the world maintain their state of high alert until more is discovered.

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