



2 JUL 1960

OFFICE OF THE HIGH COMMISSIONER
FOR THE UNITED KINGDOM
NEW DELHI · INDIA

20th June, 1960

Dear Dr. Krishnan,

I enclose an extract from a transcript from a Russian broadcast. It does not seem to have had the attention of a physicist (e.g., "rotate" for "revolve") so is probably rather garbled anyhow. Do you know anything about such techniques? The only sort of "gravitational wave" I can conceive of is a very small local alternation in "g" such as one might record on a fast-response gravitometer if a heavy weight were oscillating rapidly in its immediate vicinity. This would be by its very nature highly localised, and the idea of transmitting such a "wave" seems to savour more of H.G. Wells than of sober Physics. However, I'm just a chemist, and there may be some developments that I have not heard of. I would be very grateful if you could tell me at your convenience whether there can possibly be anything in it.

As it turned out, I didn't see very much of you at the High Commissioner's lunch. Is there any chance of your having time for a quiet dinner some time before June 29th when I go on tour? I suppose that you will be going to U.K. in early July?

With kindest regards.

Yours sincerely,

H. R. Ambler

(H.R. AMBLER)

Dr. K.S. Krishnan, F.R.S.,
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Extract from Russian Broadcast

"A bold idea for the use of gravitation as a new means of communication, rivalling radio, is suggested by a group of Soviet engineers in an article in the Sunday supplement of 'Izvestiya'. They write that gravitational oscillations, which are similar to the electro-magnetic oscillations which form the basis of radio technique, could be used for wireless communication. These oscillations could be produced by making any body rotate, or simply move. Academician Vladimir Fok, who has been awarded the Lenin Prize for his studies in the quantum field theory, has calculated that in rotating around the Sun Jupiter emits gravitational oscillations of 450 watts. The power of the gravitational waves grows rapidly with the increase in the frequency of oscillations or the number of the revolutions of the bodies. It is, for instance, sufficient to increase the number of revolutions 10 times to get a 1,000,000-fold increase in the power of the gravitational emission. Modern radio technique, using superconductivity, can make electrons oscillate with a frequency of thousands of millions per second. Such an electronic "graviotransmitter" would be able to produce a power of tens of Watts. This device could be used as "gravio-receiver" for transforming the gravitational oscillations into ordinary radio signals.

The use of gravitational waves would make it possible to establish communication through earth, water, and the ionosphere since they can penetrate through the media which are absolutely impenetrable to radio waves. Gravitational communication would, for instance, make it possible to talk with miners underground. A radiolocator based on gravitational waves could investigate unstudied deep-lying strata of the Earth. Gravitational waves will also make it possible to maintain contact between the Earth with space ships when they become inaccessible for radio on reaching ionic clouds."

Personal

UNITED KINGDOM HIGH COMMISSION
NEW DELHI.



13 MAR 1961

9th March, 1961

Dear Dr. Krishnan,

I think this bit of paper about Space Research must have dropped out of your pocket last night, so I am passing it to you. Am I right in assuming that India is, for economic reasons, unlikely to participate in the Launcher programme.

Yours sincerely

H. R. Ambler

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