

Mars Exploration (3)
Mars Exploration (3) (3)Author: Mr. Riyabrata Mondal
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Federal University of Rio Grande do Norte (UFRN), BrazilRESEARCH & DEVELOPMENT OF NEW CONCEPT OF ENERGY SUPPLY SYSTEM APPLIED TO
MARS(ENERGY FROM SPACE)**Abstract**

The methodology works on the base of geo-satellites with huge solar panels. This space orbiting satellites then convert the sun energy into current which are then converted into radio waves or microwaves to the planet. The next part is the power beaming which is the sender of the collected energy on to the planet surface . This transmission is done through phase arrays or laser emitters. Then the receiver station which comprises of photovoltaic cells or with antennas that convert electromagnetic energy into electricity. This can be one way of collecting power from space the other one is quite similar but here in the geo-satellite we use huge convex lens like one used in a magnifying glass. This lens can then direct the sun rays directly to the planet which can then be collected by the receiver. As depicted in the Fig. the receiving beam of intense solar beam will have three zones. The first one is the core where the beam has maximum intensity. Accuracy should be maintained that that this part lies in the receiver circle as it is high intensity beam which can cause harm to habitat. The second zone can be utilized by solar panels that are surrounding the receiver station. The third zone has not that much effective radiation and can be avoided as third zone contains only the diverged rays which are caused by the atmospheric particles. Discussion Some important parameters that should be taken optimized for the optimal results are • The distance of the satellite from the surface, it varies from planet to planet but for mars it's a plus point as the atmosphere is not so thick so the satellites can orbit in close proximity to the Martian surface which will help in effective transmission of the energy from sender to receiver. • The receiver is made of concave lens so center of attention should be the core zone lying in the center of the concave lens. • The receiver should be made strong enough to handle the load of the receiving beams.