# THE VERTICAL FRONTIER

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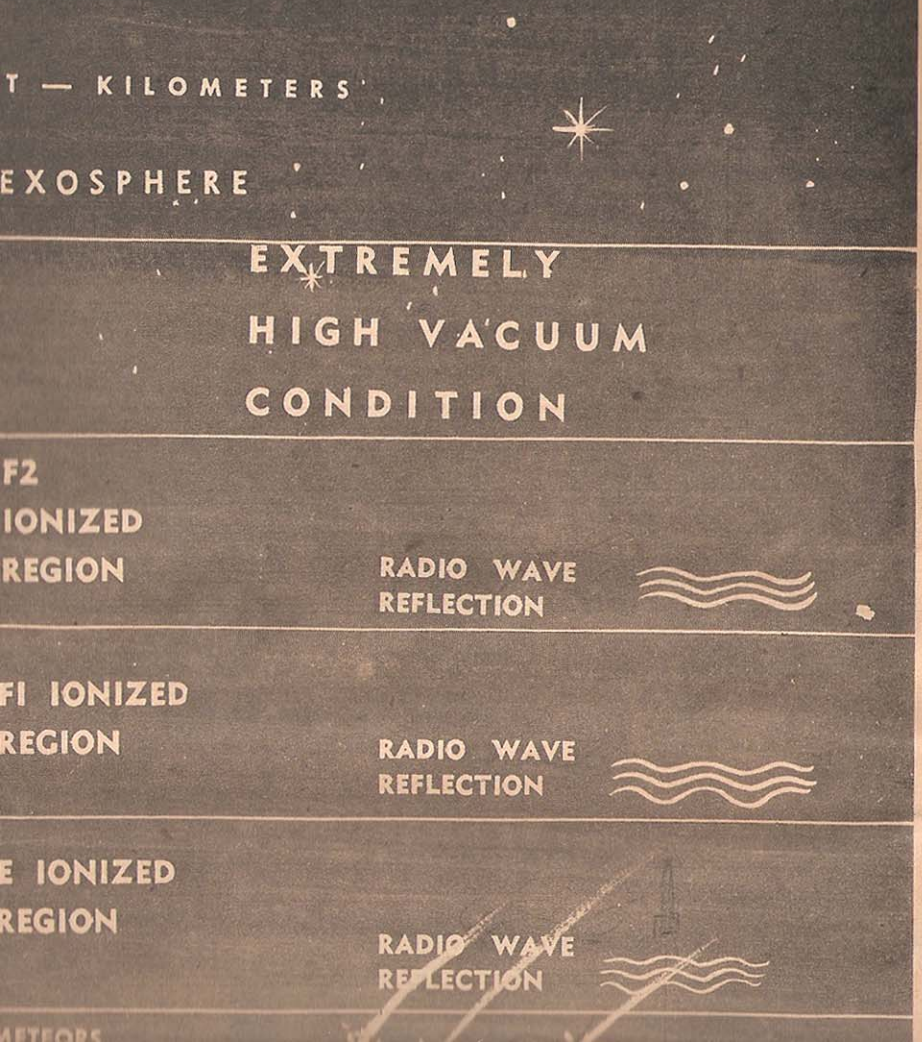


UNITED in the grandest cooperative venture in the annals of science sixty-four participating nations have launched an attack on the frontiers of the earth. Scientists of these countries, in unison, are searching deeply for the earth's scientific treasures buried in the depths of the earth, in the waters of the seas, and in the heights of the air above. This concerted exploration is known as IGY, the International Geophysical Year lasting from July of this year to the end of 1958.

Undoubtedly the two projects which have captured the fancy of most followers of modern scientific endeavor are, first, the adventurous scientific pursuits of those who are in Antarctica on Operation Deep freeze and secondly, the launching of the earth satellite, the multi-million dollared Project Vanguard. But there is another frontier, nearer home, perhaps, but also needing careful study during IGY. Vital to the well-being of earth dwellers, that frontier is the vertical one of the earth's upper atmosphere.

### Earth's Atmosphere

The densest region of the earth's atmosphere, near the solid earth and going upward about a dozen kilometers, is called the *troposphere*. The constantly changing weather conditions characterized by clouds and rains, typhoons and monsoons, by warm and cold fronts, take place in this region.

Above the troposphere is the *stratosphere* (Figure 1). Daring men are now venturing into this region but sur-