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? WHY THE WEATHER ?

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WHY THE RAINBOW?

The rainbow appears as a series of beautiful concentric colored arcs seen in the sky when light from a low sun or moon shines on falling rain. Sometimes there are two or more rainbows, one above the other; the most brilliant one is called the primary bow and has a red outer border and a blue or violet inner border; the next brightest, the secondary bow, is a larger circle, and has its colors arranged in the opposite order.

The primary rainbow is made by two processes, refraction and reflection. The sunlight enters each of a multitude of raindrops and in doing so is bent, or refracted. The red rays are bent less than the orange and yellow, these less than the green and blue, while the indigo and violet are bent most of all. Before the sunlight goes into the drops all these colors are intermingled so that the light looks only white, but the different bending separates the colors so that they can be seen. The several colors are then reflected from the inside of each drop as from a mirror. In the case of the primary bow there is just one such reflection, but, in the secondary bow, a double internal reflection which reverses the order of the colors. On leaving the drops the rays are again refracted, or spread apart, some more.

The purity of the colors depends upon the uniformity of the drops. Generally, the larger the drops the more brilliant the coloring.

(Tomorrow: The Heavy Atmosphere)

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