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A Science Service Feature

? WHY THE WEATHER ?

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HOW MUCH WATER VAPOR?

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One of the gases that compose the earth's atmosphere is water vapor --- i.e., water in an invisible gaseous form --- and it is the only atmospheric constituent that varies widely in relative amount. On very hot and humid days it may form as much as 5 per cent. of the air by volume. At the other extreme, besides being very scarce at high levels, it may dwindle to a mere trace near the earth's surface. Cases have been reported when the amount was so small that it could not be detected by the most sensitive hygrometers, so that the relative humidity was recorded as zero. There is very little of this gas in the air above a height of 5 miles, yet enough is present at heights of 12 to 18 miles to condense into the "nacreous clouds" occasionally seen at such levels.

The total weight of the water vapor in the atmosphere is approximately 14,615,000,000,000 tons. If it were all condensed into liquid water it would form a layer about one inch deep over the entire earth.

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