

## 50,000 Facts and 100,000+ Findings

**58:2.1** The planetary atmosphere filters through to the earth about one two-billionth of the sun's total light emanation. If the light falling upon North America were paid for at the rate of two cents per kilowatt-hour, the annual light bill would be upward of 800 quadrillion dollars. Chicago's bill for sunshine would amount to considerably over 100 million dollars a day. And it should be remembered that you receive from the sun other forms of energy -- light is not the only solar contribution reaching your atmosphere. Vast solar energies pour in upon Urantia embracing wave lengths ranging both above and below the recognition range of human vision.

**58:2.2** The earth's atmosphere is all but opaque to much of the solar radiation at the extreme ultraviolet end of the spectrum. Most of these short wave lengths are absorbed by a layer of ozone which exists throughout a level about ten miles above the surface of the earth, and which extends spaceward for another ten miles. The ozone permeating this region, at conditions prevailing on the earth's surface, would make a layer only one tenth of an inch thick; nevertheless, this relatively small and apparently insignificant amount of ozone protects Urantia inhabitants from the excess of these dangerous and destructive ultraviolet radiations present in sunlight. But were this ozone layer just a trifle thicker, you would be deprived of the highly important and health-giving ultraviolet rays which now reach the earth's surface, and which are ancestral to one of the most essential of your vitamins.

**58:2.3** And yet some of the less imaginative of your mortal mechanists insist on viewing material creation and human evolution as an accident. The Urantia midwayers have assembled over **fifty thousand facts of physics and chemistry** which they deem to be incompatible with the laws of accidental chance, and which they contend unmistakably demonstrate the presence of intelligent purpose in the material creation. And all of this takes no account of their catalogue of more than **one hundred thousand findings** outside the domain of physics and chemistry which they maintain prove the presence of mind in the planning, creation, and maintenance of the material cosmos.

**58:2.4** Your sun pours forth a veritable flood of death-dealing rays, and your pleasant life on Urantia is due to the **"fortuitous"** influence of more than two-score apparently accidental protective operations similar to the action of this unique ozone layer.

**58:2.5** Were it not for the "blanketing" effect of the atmosphere at night, heat would be lost by radiation so rapidly that life would be impossible of maintenance except by artificial provision.

---

**58:2.6** The lower five or six miles of the earth's atmosphere is the troposphere; this is the region of winds and air currents which provide weather phenomena. Above this region is the inner ionosphere and next above is the stratosphere. Ascending from the surface of the earth, the temperature steadily falls for six or eight miles, at which height it registers around 70 degrees below zero F. This temperature range of from 65 to 70 degrees below zero F. is unchanged in the further ascent for forty miles; this realm of constant temperature is the stratosphere. At a height of forty-five or fifty miles, the temperature begins to rise, and this increase continues until, at the level of the auroral displays, a temperature of 1200° F. is attained, and it is this intense heat that ionizes the oxygen. But temperature in such a rarefied atmosphere is hardly comparable with heat reckoning at the surface of the earth. Bear in mind that one half of all your atmosphere is to be found in the first three miles. The height of the earth's atmosphere is indicated by the highest auroral streamers -- about four hundred miles.

**58:2.7** Auroral phenomena are directly related to sunspots, those solar cyclones which whirl in opposite directions above and below the solar equator, even as do the terrestrial tropical hurricanes. Such atmospheric disturbances whirl in opposite directions when occurring above or below the equator.

**58:2.8** The power of sunspots to alter light frequencies shows that these solar storm centers function as enormous magnets. Such magnetic fields are able to hurl charged particles from the sunspot craters out through space to the earth's outer atmosphere, where their ionizing influence produces such spectacular auroral displays. Therefore do you have the greatest auroral phenomena when sunspots are at their height -- or soon thereafter -- at which time the spots are more generally equatorially situated.

**58:2.9** Even the compass needle is responsive to this solar influence since it turns slightly to the east as the sun rises and slightly to the west as the sun nears setting. This happens every day, but during the height of sunspot cycles this variation of the compass is twice as great. These diurnal wanderings of the compass are in response to the increased ionization of the upper atmosphere, which is produced by the sunlight.

**58:2.10** It is the presence of two different levels of electrified conducting regions in the superstratosphere that accounts for the long-distance transmission of your long- and short-wave radiobroadcasts. Your broadcasting is sometimes disturbed by the terrific storms which occasionally rage in the realms of these outer ionospheres.

---