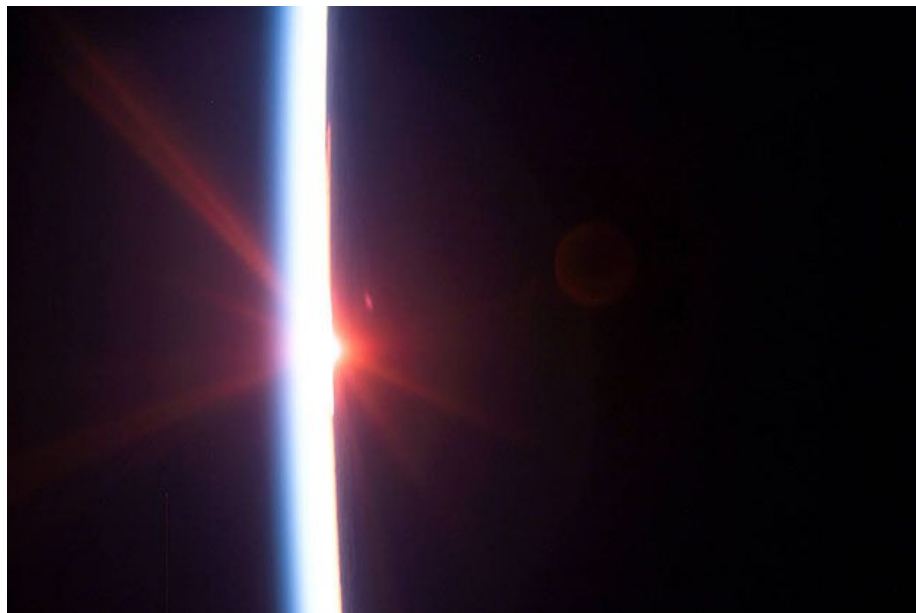


Nocturnal Sun May Have Created Bright Nights

June 23, 2017 By Cheryl Werber

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People in ancient times may have been able to see at night, despite having no sun, moon, or another source of light available. Scientists from York University in Canada recently published a study outlining how the atmosphere during ancient times could produce bright nights. Gordon Shepherd and Young-Min Cho, two atmospheric scientists speculate that an airglow may have something to do with these mysterious **bright nights**. The study was recently published in the journal *Geophysical Research Letters*.

Bright Nights Created by Airglow

The airglow or nightglow is an emission of light that is faint. Coming from the planetary atmosphere, the airglow causes the night sky never to become truly dark. The phenomenon was first discovered by Anders Ångström in 1868. It was found that different chemical reactions emit electromagnetic energy. The airglow is typically a "dull light," according to *The New York Times*. Located nearly 60 miles above the surface of the Earth, molecules in the airglow are separated by ultraviolet light in the day, and at night the molecules reunite releasing their pent-up energy. The energy, in turn, is released as light and in the Earth's atmosphere, the oxygen gives the airglow a green tint. While humans cannot see the airglow usually, but during a "bright night," the airglow radiates brighter because of waves in the atmosphere.

The waves, according to *The New York Times* are called zonal waves. Severe weather influences the zonal waves, which are broken down into different categories. Doctors Shepherd and Cho, using satellite images, were able to focus on four types of zonal waves. The zonal waves peak at different places around the Earth, but they can meet up in the "same spot," Shepherd said. He went on to add that once these zonal waves accumulate, the airglow's light increases to the point that the "naked eye" can see it and "may explain those nocturnal suns of the past." The accumulated zonal waves can stay in one place

Shepherd and Cho wrote in their study published in the journal *Geophysical Research Letters* that brights nights were observed as early as Pliny the Elder's time during the first century. Other observations of bright nights occurred in 1783, 1908 and 1916. In 1909, the bright night was described as an "earthlight." This description, according to the authors was a link "between the historical and science records." The two researchers used data from the Wind Imaging Interferometer to explain bright nights, reported Sci News.

Unfortunately, due to the high levels of light pollution, these bright nights are difficult to find now. It takes "patience, luck, and a very special place" to capture a bright night. These bright nights, also seem to tend to be seen at the middle latitudes of the Earth particularly on a "clear night and no light pollution." A hard task indeed, nowadays.


By Cheryl Werber

Photo Courtesy NASA

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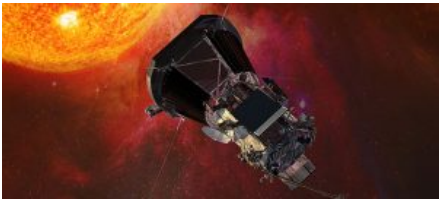
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