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## Two Total Solar Eclipses

Charles James

It was a sunny afternoon and the sky was clear. Then it gradually started to turn dark. At first it was barely noticeable but then it became apparent that something was happening to the sun. Those who had proper eye protection could watch as the sun started to look like a Pac-Man character, continuing until the sun was just a sliver. Then the sun disappeared completely, replaced by a black disc with a halo around it. The landscape looked as though the clock had sped up and it was now twilight. Two minutes later the sun started to reappear from behind the black disc. Then the sun became fully visible again.

The date is June 8, 1918. The location was a path starting in the western states of the United States of America, specifically Washington State, moving quickly from west to east, ending on the east coast in Florida. The total eclipse of the sun in 1918 traveled roughly the same “path of totality” as the one on August 21, 2017, which ranged from Oregon to South Carolina.

Although people in 1918 knew that the total eclipse was coming, the event apparently was not hyped in the press to the extent it was in 2017. There was, however, considerable press coverage after the fact. One publication that reported on the eclipse was *Die Abendschule*, which ran a two-page article about it in its June 20, 1918, issue. It starts with a general description of what a solar eclipse is:

*Eine Sonnenfinsternis ist, wie wir von der Schulbank her wissen, nur zur Zeit des Neumondes möglich, also wenn der Mond zwischen Sonne und Erde steht.*

A solar eclipse, as we know from school, is possible only at the time of the new moon, that is, when the moon is between the sun and the earth.

It continues with a detailed description of the geographic course of an eclipse shadow, followed by a list of recent eclipses (1916 in Central America, 1917 in North America), as well as future eclipses that would be visible in North America (1919, 1922, 1923, 1925). Then the article describes how a total solar eclipse unfolds, written in such a way as to give the impression that this was how the eclipse of June 8, 1918, appeared:

*Zu Beginn sieht man, wie sich von Osten her kommend der Mond ganz allmählich vor die Sonnenscheibe schiebt, so dass es aussieht, als hätte jemand ein Stück der Sonne abgebissen. Immer weiter schiebt sich der Mond vor, immer kleiner wird die Sonnenscheibe, bis unmittelbar vor Eintritt der Totalität von ihr nur mehr eine schmale Sichel sichtbar ist, die aber weniger als den Halbkreis umfasst, weil der Mond größer erscheint als die Sonne. Der Mond selbst ist tiefschwarz.*

At the beginning one sees the moon gradually sliding in front of the solar disk from the east, so that it appears as if someone has bitten off a piece of the sun. The moon advances farther and farther, the sun's disk growing ever smaller, until just before full totality only a narrow crescent is visible, less than a semicircle, because the moon appears larger than the sun. The moon itself is a deep black.

The article includes three drawings: the first shows a sketch of the moon crossing North America; the second shows a large generic telescope; and the third shows the telescope at the Lick Observatory in Mt. Hamilton, California. There are also two photos of sun spots (*Sonnenflecken*) taken at the Naval Observatory in Washington on October 12, 1903.

Apparently, Denver, Colorado, was the ideal spot to observe the 1918 eclipse. It was only four miles from the center (*Mittellinie*) of the zone of totality (*Zone der Totalität*), and it had an observatory with a 20-inch telescope and other astronomical instruments. It was also at an ideal elevation:

*Die Stadt liegt nämlich 5,272 Fuss über dem Meerespiegel, die Luft ist also klarer und weniger bewegt als die der wasserstoffgeschwängerten niedrigeren Regionen.*

The city is 5,272 feet above sea

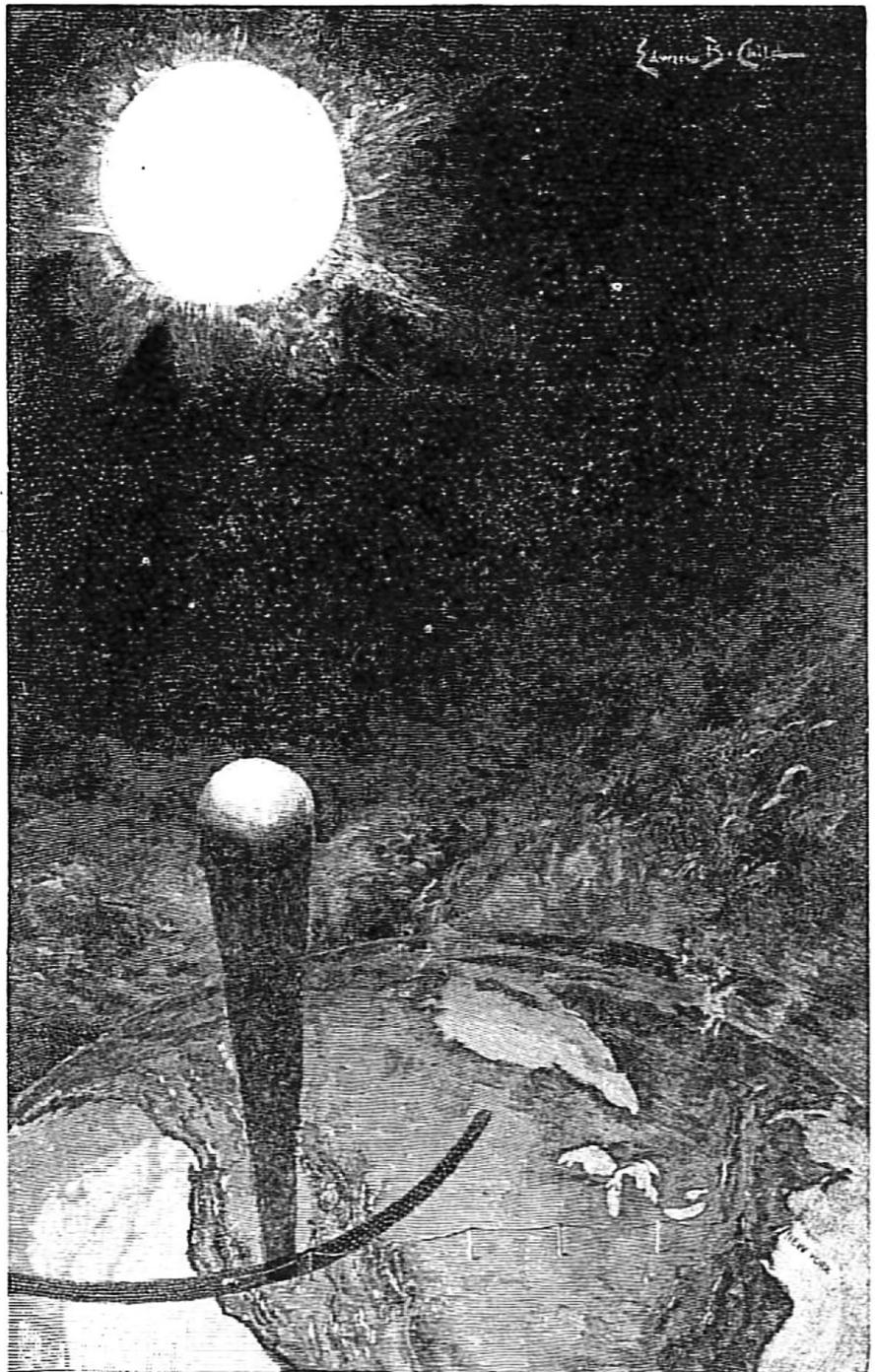
level, so the air is clearer and less turbulent than that of the hydrogen-rich lower regions.

The eclipse started in the afternoon of June 8 at “3 Uhr 12 Minuten 15 Sekunden” and ended at “5 Uhr 27 Minuten 36.5 Sekunden.” The actual total eclipse started at “4 Uhr 22 Minuten 55 Sekunden” and lasted “1 Minute und 28.7 Sekunden.”

In addition to many scientific observations made of the sun’s corona during this total solar eclipse, the article whimsically notes it was an opportunity “finally to ascertain whether a planet called Vulkan, which allegedly orbits so close to the sun that it has not yet been seen by human eyes, truly exists or is only a fantasy of some astronomers.”

In 2017 we did not expect to see any new planets, just a spectacular light show that occurs regularly somewhere on earth but very rarely where most of us live. The next one to cross parts of the Midwest will be in 2024. Let’s hope many of us will be able to experience this unique phenomenon once again. 🌑

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Die Bahn einer Sonnenfinsternis. Wie der Mond, zwischen Sonne und Erde tretend, eine Schattenbahn zieht.

The path of a solar eclipse. How the moon, passing between the sun and the earth, casts a path of shadow.