

the rings were made as Maxwell had supposed. The spectroscope, which analyses light, reveals whether the source of the illumination is moving towards us or away from us. If the source is approaching, the light waves are squeezed together and the light is made bluer than if the source is stationary. If it is receding, then the waves are spread out, and made redder.

By photographing the spectrum of the star or planet on the same plate with the spectrum of a terrestrial light, as an arc struck between two rods of iron, such measurements can be made. The dark lines which appear in such a photograph may be shifted one way or the other in the spectrum of the celestial body, and indicate either approach or recession.

Keeler photographed the spectrum of Saturn to show which parts were approaching and which receding. The lines from the ring were slanted in such a way as to indicate that the inner part of the ring moved fastest, either when it was approaching us on one side or receding on the other. The outer part lagged behind, and thus a mystery first detected by Galileo was finally solved after nearly three centuries.

Venus Brighter

Saturn is not the only planet visible in the September evening sky, however. Venus, now even brighter than last month, is shining brilliantly in the southwest for an hour or so after sunset. On September 13 it reaches greatest eastern elongation, which is the time when it is farthest to the east of the sun. After that date it will begin to approach the sun again, finally to be lost completely in its glare by November. Though farthest east this month, Venus is not in a good position to view, because it is far to the south. The ecliptic, the path of the planets, is inclined least to the horizon in the evenings at this time of year. When an eastern elongation of Venus comes in the spring time, as it did a couple of years ago, then the planet shines high in the west and is much more conspicuous than now.

Later in the night the planets Mars and Jupiter can be seen. Mars is in the constellation of the twins, Gemini, and rises about 11:30 p.m., so that its ruddy glow can be seen in the eastern sky in the early morning hours. Jupiter comes along less than half an hour later in the middle of

the month, so that if you get up early enough, or stay up sufficiently late, you can see these two planets close together. Jupiter is the brighter of the two, though both are very bright. Jupiter is brighter than any star, and though Mars is exceeded in brilliance by several stars, its steady red light makes it easy to identify.

Six first magnitude stars are to be seen this month in the evening skies. Low in the south is Fomalhaut, in Piscis Austrinus, the southern fish. Almost directly overhead is Deneb, at the head of the cross of Cygnus, the swan. To the west of Deneb is Vega, in Lyra, the lyre, and to the south is Altair, in Aquila, the eagle. The constellation of Bootes, the herdsman, is low in the northwest, with the brilliant Arcturus, while low in the northeast is Auriga, the charioteer, with Capella to mark its location.

The moon is full this month on the seventh, in last quarter on the fifteenth, new on the twenty-second and in first quarter on the twenty-ninth. This means that the first week or so of the month will enjoy bright moonlight evenings, as will the last few days, but in the middle of the month the evenings will be dark.

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River Obeys Prediction

THE PREDICTION by Dr. Sven Hedin, noted Swedish explorer of Central Asia, that in 25 years the River Tarim in Chinese Turkestan would abandon its course and return to an ancient channel farther north has now been fulfilled, according to a communication received here. The river is running now where it did 1,600 years ago.

Dr. Hedin's attention was called to the wandering stream when he tried to follow a Chinese map 1,600 years old. It appeared that the Chinese geographers had made a mistake, for the river on the map was not on the landscape, but instead there was a "new" river to cross 550 miles away. After studying geological conditions, Dr. Hedin justified the Chinese scholars and their map, by explaining that the southern branch of the Tarim apparently swings back and forth like a pendulum. He predicted then that the accumulating silt would soon drive the river to seek its old course.

Geography

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Prehistoric Mystery City in Mexico

Archæology

A PREHISTORIC city of which little is known except that it was one of the vassal-kingdoms of the Aztec Empire before the Spanish Conquest, is now being explored. The mysterious city is near the modern Otomi village of Calixtlahuaca in the State of Mexico.

One pyramid structure larger than the rest, is surrounded by ten smaller ones, all swathed in an ancient covering of earth and vegetation. The main pyramid once housed a temple on top. The base is surrounded by a series of four terraces, now cornfields, which formed a graduated ascent.

Excavations have already revealed that the city was built many centuries ago. Various cultural groups occupied the site up to the time of the Aztecs whose pottery remains attest to their influence there, if not to actual occupation.

The main pyramid has a stairway on the east fairly well preserved, and the walls still retain portions of the

plaster facing with traces of red, blue, black and yellow paint.

The Christian church of Calixtlahuaca, an Aztec name which might be interpreted as "Prairieville," was built with pagan building materials, as stones carved in hieroglyphs show. Natives of neighboring villages treasure idols of clay and stone and old pottery which they find in their cornfields. A new road leads for the first time in their history from the state capital at Toluca, opening this area to modern traffic.

Archaeological work at Calixtlahuaca is under a unique local department of archaeology established by Governor Filiberto Gómez. All other archaeological investigation in Mexico is maintained by the federal government. José García Payón is directing excavations, while Dr. Manuel Gamio, well-known Mexican scientist who has known of the existence of the site for some years, has been "consulting archaeologist."

Archæology

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