



NORTHERN SKIES DURING APRIL

The best known of all the constellations, even though it contains no first magnitude stars, is the Great Bear, Ursa Major, part of which is generally designated as the Big Dipper. This famous group is high overhead now and in its best position of the year.

two stars, it will pass close to Polaris, the pole star, and the brightest orb in the constellation of Ursa Minor, the lesser bear.

By far the most brilliant object in the April evening skies, except, of course, the moon, is the planet Venus, now shining so brilliantly in the west. Venus, like the earth, and all the other planets, revolves around the sun. But the orbit of Venus is within that of the earth. We are approximately 92,900,000 miles from the sun while Venus averages only 67,170,000 miles. That means that it can never be seen far from the sun. It seems to oscillate about that body, sometimes appearing east, and sometimes west. When almost in line with the earth and the sun, either between the two, or on the side of the sun opposite the earth, it is invisible. This month, on the nineteenth, it is farthest east, and on that day it will set latest in the evening. Afterwards, it will start moving towards the sun, to disappear from view in a few months, only to reappear on the western side, and to be visible in the east before sunrise during the autumn months.

#### Once Every 584 Days

On June 29, when just halfway between its disappearance from the evening sky, and its reappearance in the morning, Venus will be almost directly between the sun and earth, at what astronomers call inferior conjunction. This happens once every 584 days. Usually, when it happens, Venus does not pass across the face of the sun, but above or below it. At rare intervals, however, the planet comes directly between the sun and us, and then Venus can be seen as a black spot moving

across the solar disc. This is called a transit of Venus, and is a very rare astronomical event, far rarer than a total eclipse. The last occurred on December 6, 1882, while the next will not be until June 7, 2004.

Another occurred on June 3, 1769, and is particularly important in astronomical history because it was observed in the United States by David Rittenhouse, the pioneer American astronomer, in Philadelphia. This was done with the cooperation of the American Philosophical Society, of which he was later president, and which had been founded by Benjamin Franklin. Some of the observations were made from a platform erected in Independence Square, as it is now called, immediately in back of the old State House, or Independence Hall. It is said that this platform remained there for some years, and in 1776, when the Declaration of Independence was first given to the public, the speaker stood on this vantage point to read it.

During this present month of April, 1932, there is being celebrated the two hundredth anniversary of the birth of Rittenhouse. It was on April 8, 1732, that David was born in a house that is still standing on Lincoln Drive, in Philadelphia. Thus he was born the same year as Washington, and it is interesting to note that two of his greatest astronomical contemporaries, Maskelyne, who was to become Astronomer Royal of England, and Lalande, who occupied a similar post in France, were also born in 1732.

Rittenhouse spent his boyhood and early manhood at Norriton, near Norristown, Pa., where he became interested in things scientific and mechanical, and by 1749 he was already established

as a clock maker. In addition to a number of clocks, of which the most elaborate is now at the Drexel Institute, in Philadelphia, he made two famous orreries, or models to show the motions of the heavenly bodies. The first of these went to Princeton University, and is no longer in existence, but the second, the more elaborate, has been carefully preserved by the University of Pennsylvania, for whom it was made. It has been loaned to the Franklin Institute. Restored to its original working order, it will be one of the main features of the new Franklin Institute Museum. One part of the orrery showed the date, time, place and duration of eclipses of the sun, for a period of 5000 years before and 5000 years after it was constructed. No other instrument ever conceived has been capable of this.

In addition to his observations of the transit of Venus in 1769, which made possible a more accurate determination of the distance of the earth from the sun than had previously been made, Rittenhouse also made the first careful observation of an eclipse in the colonies. This was on June 24, 1778, the last total eclipse visible from the region of Philadelphia.

Rittenhouse was also known as a surveyor, and determined practically the whole boundary of Pennsylvania, laying the foundation for the work of Mason and Dixon in 1766. Also active in affairs of state, he deservedly ranks as one of the greatest men of his time.

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#### ORNITHOLOGY

### Japanese Beetle Has Foes In Sparrow and Starling

ENGLISH SPARROW and European starling, much berated as pests of the first order, have at least one use in the world, says Dr. Thomas E. Winecoff of the Pennsylvania Game Commission, in a report to the headquarters of the National Association of Audubon Societies. They are destroyers of a much worse pest, the Japanese beetle.

Not many birds will eat Japanese beetles, Dr. Winecoff says, but sparrow and starling are joined in their attack by two of our commonest song-birds, themselves occasionally looked upon as nuisances by orchardists: robin and purple grackle. And down on the ground an introduced game bird, the ringnecked pheasant, lends a helping hand, or rather beak, in the good work of beetle destruction.

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