

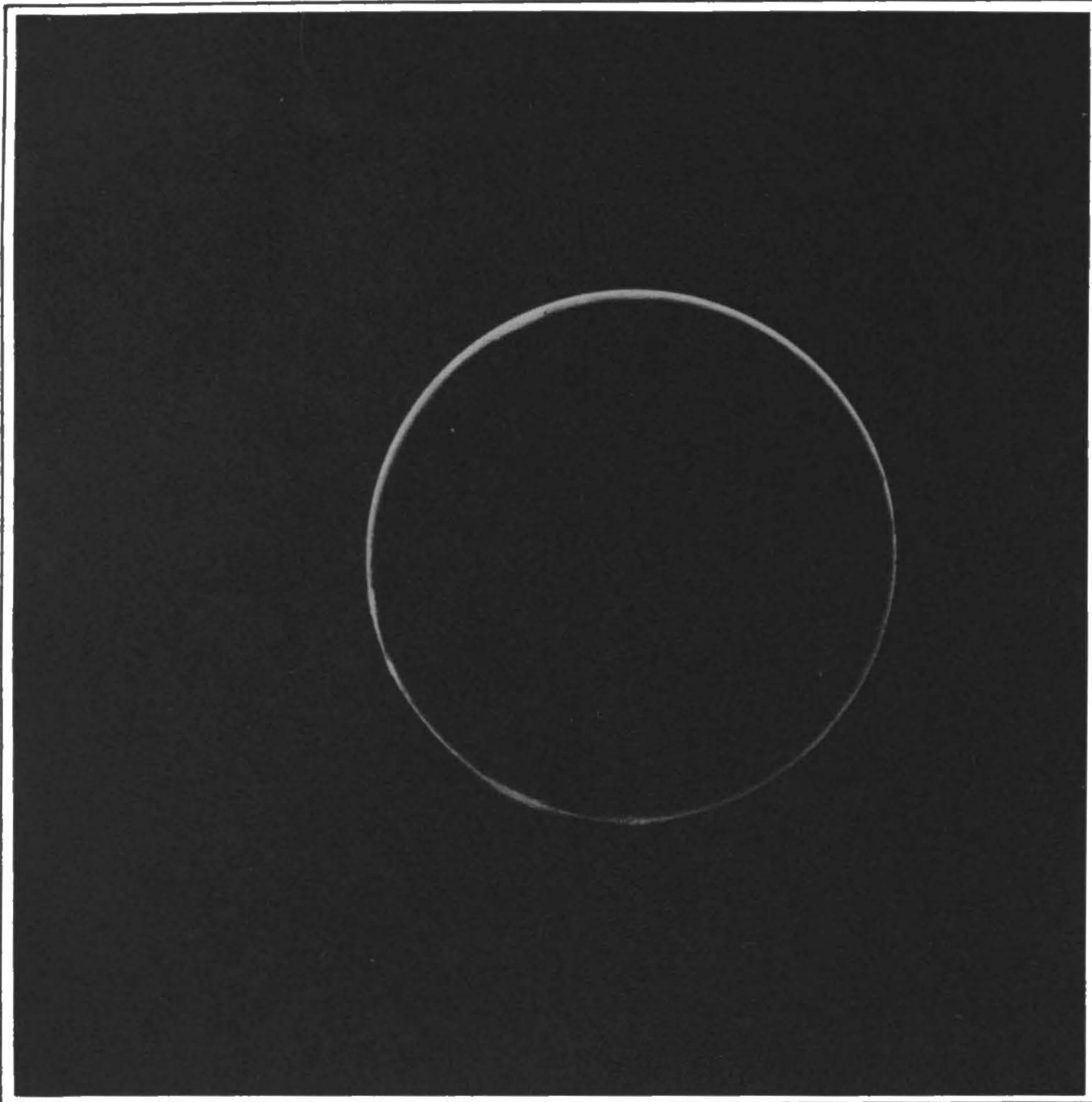
THE ILLUSTRATED LONDON NEWS



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SATURDAY, AUGUST 20, 1932.

THE PROBLEM FROM EVENING STAR



VENUS AS SHE APPEARS WHEN BETWEEN THE EARTH AND THE SUN—HER ATMOSPHERIC LAYER ALONE VISIBLE: A DRAWING BY M. LUCIEN RUDAUX FROM OBSERVATIONS MADE ON JUNE 29 OF THIS YEAR.



A MIDSUMMER PHOTOGRAPH SHOWING THE UPPER REGIONS OF THE EARTH'S A DISTANT LIGHTHOUSE

1.

I HAVE recently written in these pages of the planet Venus, whose splendid brilliance, at certain times, like last spring, can light up the earth to such an extent that we might compare her to a small moon. Photographs taken by her light alone give us ample cause to appreciate that fact. The beautiful planet disappeared from the evening sky during the month of June. She is now once more visible, but on the other side of the sun, whom she precedes in the morning sky at his rising. Venus was lost to view for some time, because, on June 29, she passed between the earth and the sun, to which she was then so close as to vanish altogether in his radiance. Furthermore, in such a position, she presents the non-lighted part of her globe more and more towards the earth, and only allows us to perceive a luminous crescent, slender as a thread, progressively diminishing in width until passing in the line of the sun, a moment when the face is entirely turned towards us. Therefore, during that short period the planet becomes practically invisible to the human eye, but without ceasing to be distinguishable to observers. However, opportunities of observing Venus under these conditions—that is to say, at the exact moment when, placed between the sun and us, she offers a very special aspect—are of fairly rare occurrence. In the first place, such a circumstance, resulting from the combination of the respective movements, only recurs every 584 days; and it must so happen that on that particular day the sky should be perfectly clear. Strangely enough, this year, in spite of the inclemency of the weather, the conditions turned out to be favourable. At the

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2.

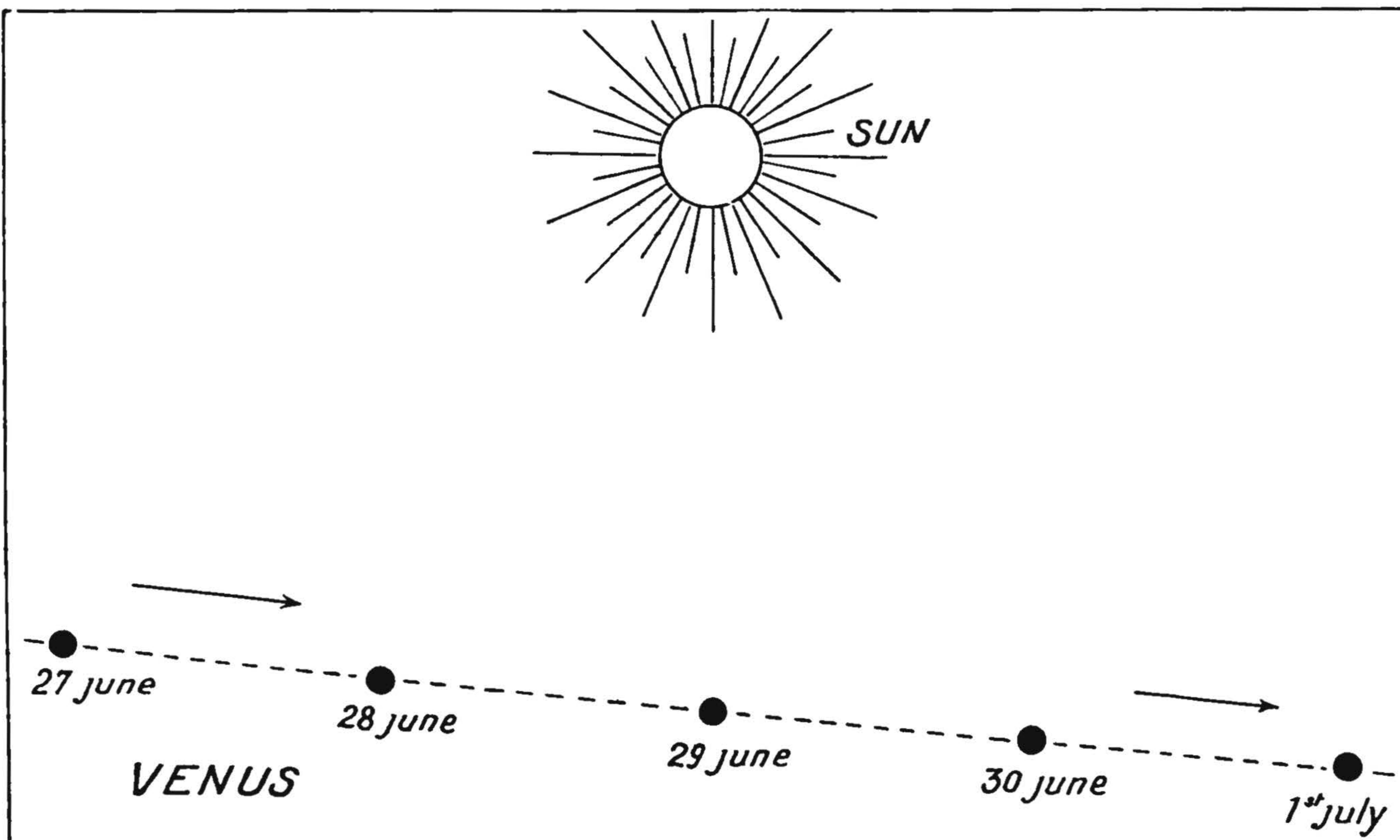
observatory of Donville I was therefore able to perceive Venus passing, on June 29, between the sun and earth. On that occasion she appeared, not under her usual aspect of a small moon, but like a glittering ring of varying intensity outlining the globe, which—it may have been illusion or reality—seemed to be slightly darker than the surrounding space. That ring was due to the atmospheric layer around the planet, which refracts and diffuses the light of the sun beyond. In the direction of the sun, beneath which—as the result of the inclination of its orbit—Venus was passing, an extremely slender crescent was still to be seen, intensifying the brilliance of the celestial ring. If we now wish to form an exact idea as to the cause of that

[Continued in Box 3.]

5.

are invisible, it is because that region of the planet is occupied by a white veil, of which the extent and position are subject to important variations. Without forming any definite opinion as to their nature, these appearances can only correspond to disturbances residing in the midst of the atmosphere. And, by reason of their almost constant presence, they constitute an obstacle that generally only allows the details of the surface of the ground to be partially and very unequally discovered. If, therefore, we wish to have an idea of the "geography" of Venus, it is necessary to perform a veritable synthesis—in a word, reconstruct it bit by bit, like a sort of celestial puzzle! With the help of numerous drawings made in the Donville Observatory, it has been possible to make that attempt. The map reproduced here is the result of the piecing together of all the details, discovered one after the other, and fitting in correctly with each other. It gives a general idea of the aspect of the surface of Venus as we should see her free from the atmospheric disturbances that screen the greater part of her from our view, and to which, on account of their instability, we must impute uncertainties and contradictions.

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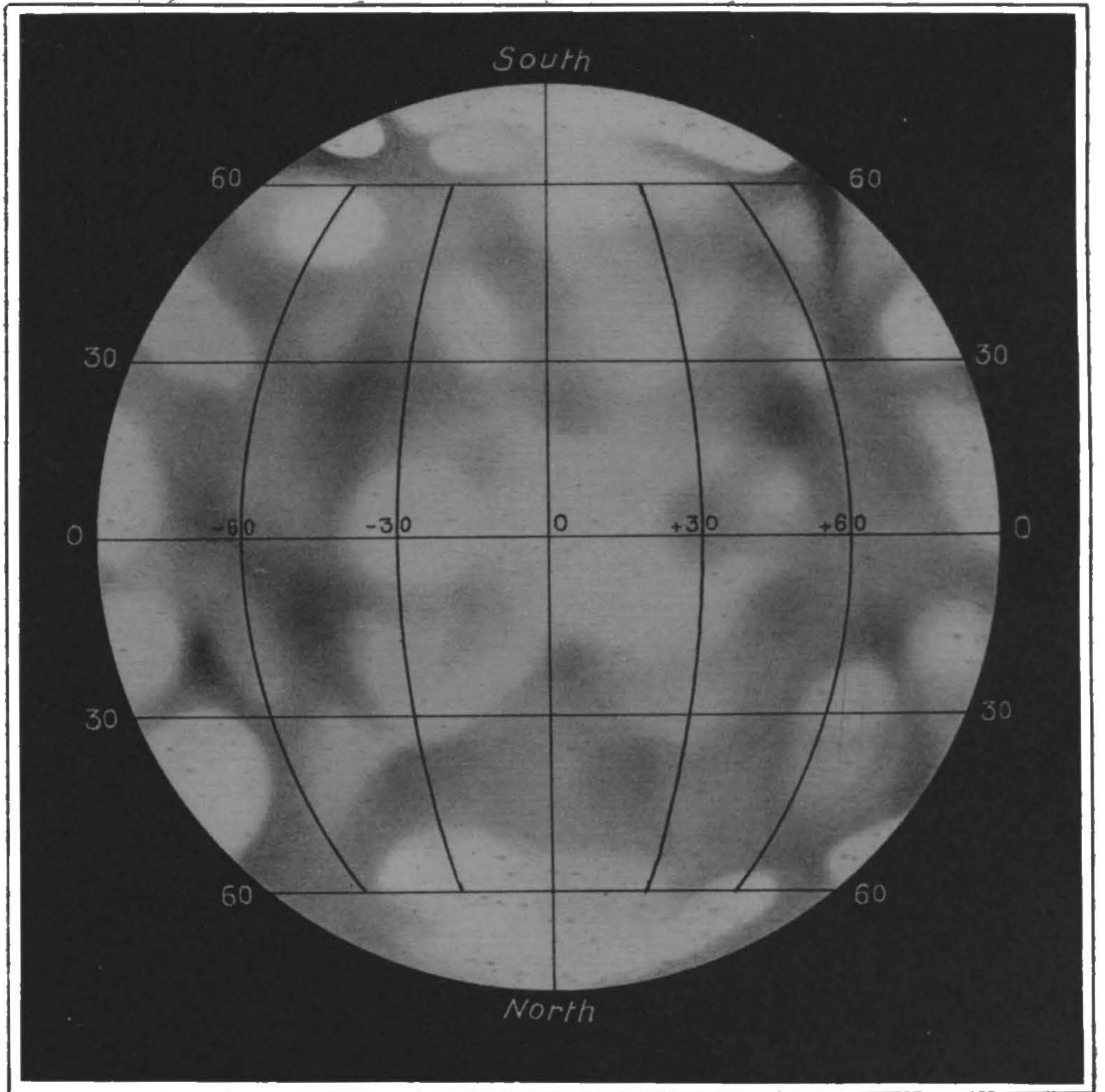


ILLUSTRATING AN EVENT WHICH OCCURS ONLY ONCE IN 584 DAYS: A DIAGRAM SHOWING THE SUCCESSIVE APPARENT POSITIONS OF VENUS IN RELATION TO THE SUN AT HER RECENT PASSAGE BETWEEN IT AND THE EARTH.

OF VENUS: TO MORNING STAR.



ATMOSPHERE LIT BY THE SUN: TWILIGHT AT 11.0 P.M. AT THE END OF JUNE—ON THE HORIZON.



ACHIEVED BY THE PIECING TOGETHER OF NUMEROUS DETAILS SEPARATELY DISCOVERED THROUGH THE PLANET'S ATMOSPHERE: A RECONSTRUCTION OF THE CONFIGURATIONS ON THE SURFACE OF VENUS ON THAT HALF OF THE GLOBE WHICH IS LIT UP BY THE SUN.

3.

apparition, we must consider what happens after sunset or before sunrise in the earth's atmosphere, of which the higher regions, although we are in the dark, are lit up by the sun and determine the glorious tints of twilight and dawn. In that respect it is of interest to compare the photograph reproduced here with the halo visible around our neighbour; and the relative intensity of the latter may be the more easily understood, for Venus, who is much closer than we are to the sun, receives nearly double the light from it. The fact that the atmosphere of Venus may be seen in this way shows it to be of an importance comparable at least to our own. Let us now add that it plays a considerable part in the appearances that the planet offers to

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4.

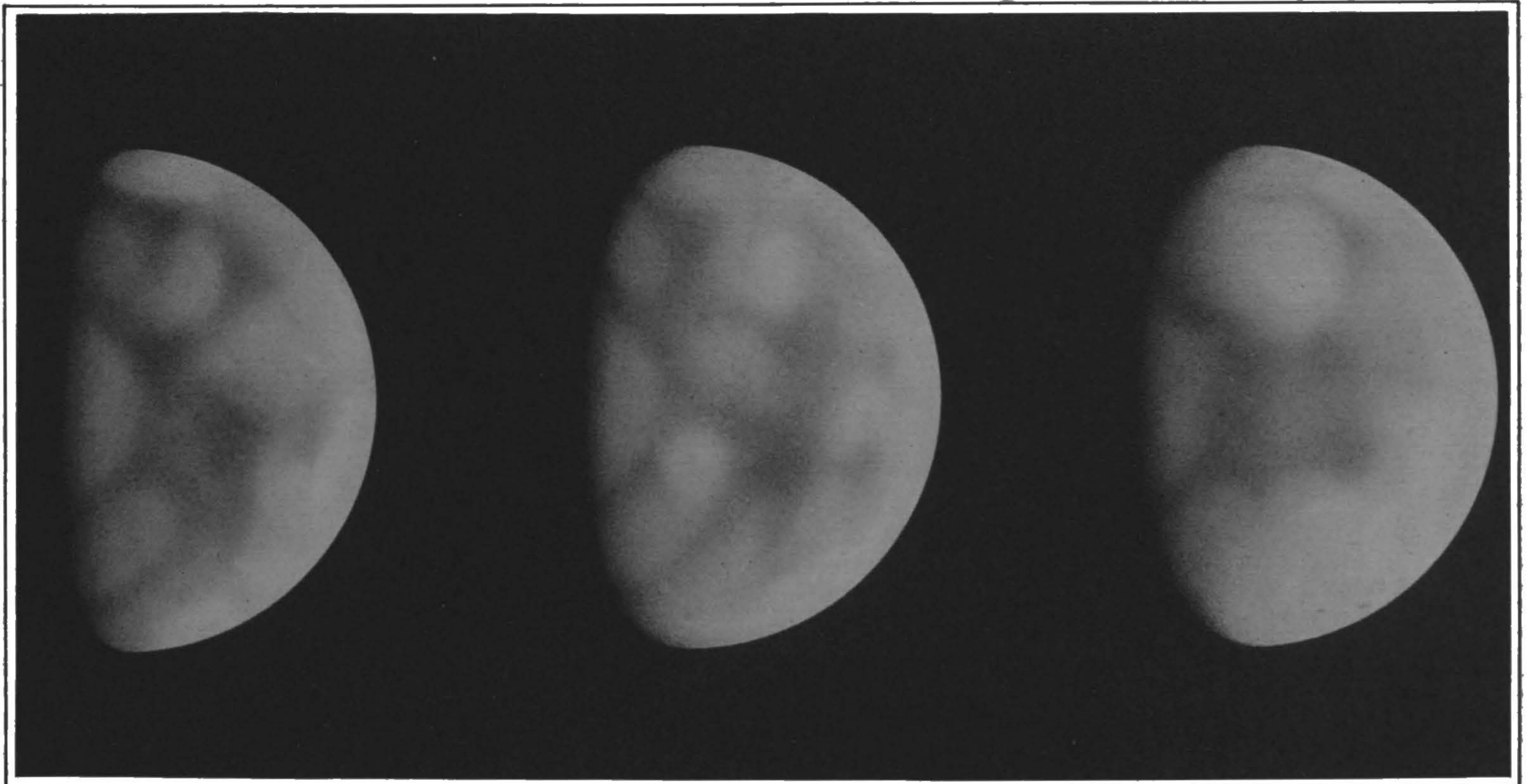
investigation, and, indeed, that it is the despair of observers. At first sight the telescopic image of Venus seems to be of a uniform whiteness, and only a very prolonged examination permits us to discover grey patches in it, and also spots whiter than the rest: the whole very confused, indefinite, and varying from one period to another. Also, the representations made of the planet's appearance do not agree, as a rule, any more than do the estimates of its rotation. Some are of the opinion that it revolves, like the earth, in about 24 hours or a few days; while others follow Schiaparelli in his theory that the rotation is effected in 229 days, the same amount of time as the revolution round the orbit: so, in that case Venus would always turn the same face towards the sun, and we should only be able to study, in the course of the different phases, the one half of its globe that is illuminated. Between these two extremes it seems difficult to admit a middle term! We must therefore try to find an explanation of these contradictions. We might find it, it seems, by admitting that the recognised aspects correspond with the simultaneity of two phenomena of a different order. At least that is what would appear from the comparisons of the observations that I have been able to carry out since 1892 up to the present day; here, naturally, I can only give a brief summing up of them. The comparison of drawings taken in the course of that long period reveals, on the one hand, the presence of certain fixed points unequally visible from one period to another, but always recognisable in the same places when they can be distinguished. When they

[Continued in Box 5.]

6.

What do those patches represent? Oceans or immense grey plains like those of earth? It would be rash to formulate a decided opinion with regard to these configurations, so imperfectly seen through Venus's aerial veil, and the first attempts can only give a general outline. At least, by their immutable apparent positions, they afford proof that Venus, in accordance with the assertion of Schiaparelli, always presents one and the same side of her globe to the sun's light. That world, without the alternation of night and day, is therefore different from our own.

LUCIEN RUDAUX.



TELESCOPIC ASPECTS OF VENUS: DRAWINGS SHOWING THE FIXED SPOTS ON THE SURFACE, MODIFIED IN SHAPE BY THE OVERLYING ATMOSPHERIC VEILS, WHICH CONSTANTLY CHANGE THEIR SIZE AND POSITION.