

ERRATUM.

On page 90 of JOURNAL, Vol. I, No. 4, from the 7th line from the top, strike out the words "one of," and in the 8th line *read* the word 'are' for 'is.'

The positions of the apices thus derived are R.A. $90^{\circ}.8$ Dec.— $14^{\circ}.6$ for Drift I and R.A. $287^{\circ}.8$ Dec.— $64^{\circ}.1$ for Drift II, which agree closely with similar positions found by Professor Bose from the same catalogue by other methods.

The conclusion we must draw therefore from these remarkable researches is that the visible universe consists of stars composing in the main two great streams, one of which is travelling in the directions just mentioned.

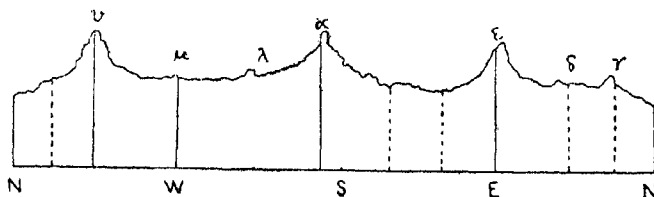
The Crater Clavius as viewed by an Observer on the Moon.

BY U. L. BANERJEE, M.A.

In my last paper I dealt with the Crater Plato, which is a walled circular plane 60 miles in diameter, with comparatively level interior bed, surrounded on all sides by a mountainous ring varying in height from 3,000 to 3,800 ft. I shall now describe another crater named Clavius, situated between 9° to 21° long. and 55° to 63° lat. It is 142.6 miles in diameter, having an area of 16,000 square miles, surrounded by an elevated mountainous range, the average height of which varies from 9,000 to 13,000 ft. above its plane.

Its western wall rises with a gentle slope from the elevated regions on the west and falls abruptly into a broadly terraced declivity to the interior of the crater, the general elevation there being 12,000 ft. This wall, running northwards, rises abruptly into a lofty peak ν some 17,300 ft. high, situated at the north-western corner of the crater, and then slopes down to an elevation of 9,000 ft. on the north.

Opposite this lofty peak ν and on the east side is another peak ϵ 16,800 ft. high; here the wall again gently slopes down reaching a height of 10,000 to 13,000 ft. throughout the entire south-eastern part, and then terminates into another peak α 16,800 ft. high on the south. Thus the plane is practically surrounded by a chain of mountains, with 3 lofty peaks, the view of which may be graphically represented by spreading out the walls in a straight line thus:—

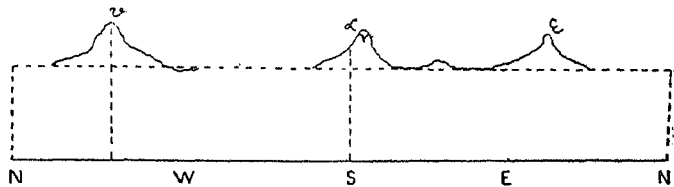


The interior of the crater is not uniformly level throughout, as is generally noticeable in the case of Crater Plato. There are several ring planes, the largest two being on the south-western and north-western corners, about 32 miles in diameter. The walls of the ring plane on the south-western corner are 8,360 ft. high, while those of the other ring plane vary in height from 7,500 ft. to 11,700 ft. Besides these, there are several small ring planes at the centre, the largest and finest of which is 16 miles in diameter, with walls 2,900 ft. above the interior of Clavius, and 9,360 ft. above its own floor. Thus the bed of this ring plane is 6,460 ft. below the plane of Clavius. Another smaller but more regular plane is a little east with walls 6,200 ft. high above its completely level interior.

The beds of the largest ring planes at south-western and north-western corners are not perfectly level; there are a number of long ridges and some mountains as well as some small craters. Short mountain arms extend on to the interior of Clavius, one of which contains a row of crater pits

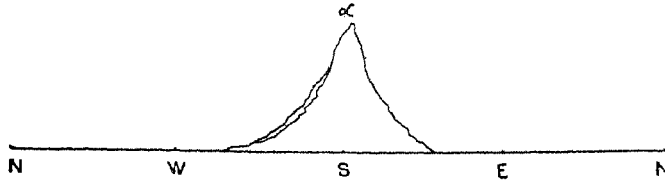
Now let us consider the views which an observer will get of the surrounding mountains and peaks by standing at different positions in the crater.

(1) If he stands at the centre, all the walls would be about 71.3 miles distant from him. Applying the formula $h = 2.44 d^2$, (when h = height of the walls in feet invisible to him, d = distance of the walls from him in miles) we find that 12,400 ft. of the walls from the base will be invisible to him. The entire chain of the mountain walls will therefore practically disappear from his sight, and he will see only 4,000 to 5,000 ft. of the three peaks α , ν and ϵ , and about 600 ft. of the wall on the south-eastern border.

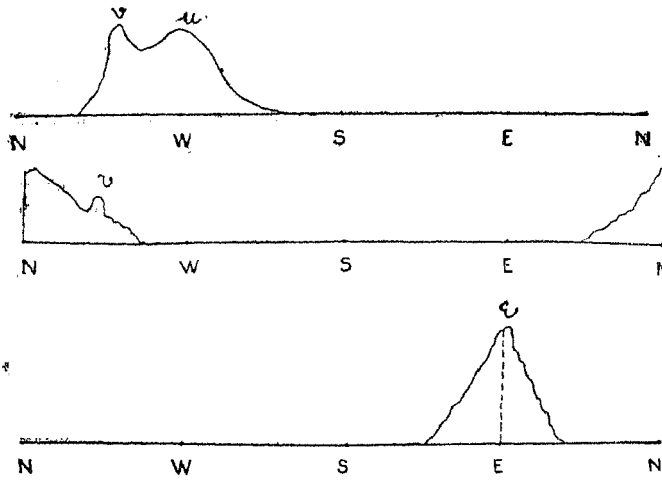


(2) If he moves to southern end, the peak α and the mountains on both sides of it will appear to him, while the peaks ν and ϵ will be about 123 miles distant from him and disappear altogether from his view.

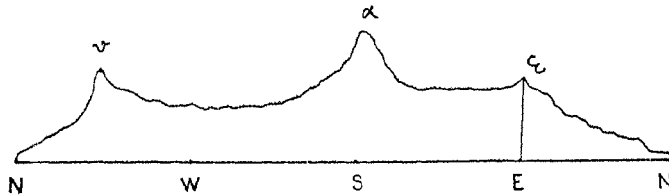
The mountain ring will appear to him as shown below :—



If he now moves to the west, north and east walls the views of the mountains will successively be as represented below :—



If he can once reach one of the peaks, say α , and stand on the top of it, he will see the entire mountain chains on all sides, the peaks ν and ϵ will appear much lower and lower, and the mountains on the north just opposite him will disappear below the horizon.



An interesting view will be obtained if he may get over the walls of one of the largest craters, say one on the southwestern corner. Its diameter being 32 miles, only 625 ft. of the base of the mountain will disappear from his view, and he will see a ring of mountains all round 8,735 ft. high.

If he stands at the top of the mountain chain, he will have full view of the wall near him, and only half of the walls on the opposite. The whole mountain chain will appear as shown below :—



As the observer standing on the summit of the peak α will have a full view of the tops of the mountain chain all round, he will see a magnificent appearance of the peaks and the bed of the plane below during the lunation period. With the rise of the sun on the west, the few peaks on the western wall catch the light first, and soon after the entire wall on that side gets illuminated. Gradually the tops of the mountains surrounding the ring planes in the interior come out from the shadow of the night, while the dark mass of shadow still envelopes the floor of Clavius. A little while after light points appear on eastern walls rapidly widening into an illuminated mountain chain all round. By the time the tops of the mountains get distinct, five streaks of light begin to run across the dark mass of shadow on the bed of the crater, breaking through the mountain passes on the west wall. Gradually these streaks widen near the centre, and rapidly illuminate the interior. The ground at the foot of the western wall and the ground beyond the eastern wall still remain in the shadow of the mountains, while the ring planes in the middle have their floors still totally immersed in darkness. As the sun rises higher and higher, the shadows of the mountains get shorter and shorter, and darkened interiors of ring planes get illuminated. At mid-hour the whole surface becomes fully illuminated, and the whole crater becomes a mass of light.

Meteors.

By THE DIRECTOR OF THE SECTION.

In February there are five meteoric showers ; the first is from 5th to 10th, the second and third on the 15th, and the fourth and fifth on the 20th. They are not very important, but as the first deserves more attention than the others, a brief description of it is now given. The meteors of this shower are slow and bright, and the radiant point is situated in the constellation Auriga. Most persons, I suppose, know the constellation Orion. At about 9 p.m. it can now be seen very high up in the sky. The line joining the three