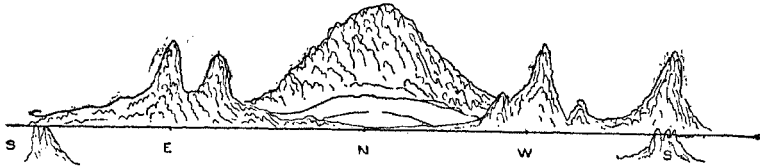


Putting north in the centre of our diagram, we may depict the view as shown below :—



From here he will catch a most picturesque view of the effects of the sunshine on the mountain tops and the inner bed below during the lunation period. As the sun rises from the west, he catches the beam of light first, while the bed of Gassendi and its surrounding walls remain immersed in total darkness. Gradually the sunlight falls on the mountain peaks, and afterwards on the walls on the west, which cast their shadows on the interior. As the sun rises higher and higher, the mountain peaks on the eastern walls, as well as on the central mountainous pass, come out prominently, and the shadows of the western wall becoming shorter and shorter, display the interior of the plane, with its numerous ridges, rills and craterpits. The western side of the walls and ridges still remain in darkness, which stand in strange contrast with the bed of Mare Humorum, which has by this time got the full sunlight. As the sun becomes vertical, the craters and ridges stand out very prominently, showing the effect of the subterraneous forces on the face of the moon during its formation. As the sun goes down on the east, the western walls gradually lose its light, and the shadows of the eastern wall cover the inside of the crater. Unlike our 24 hours, full 30 hours are taken by the sun in completely disappearing from the view of our observer, and he will have work for the whole period (if he can wait at all) to have the full view of the sunshine. As the sun goes down the horizon the whole scenery becomes immersed in pitch darkness, there being no atmosphere, or any appreciable one, to give him an hour's twilight to find his way down the mountain side.

Simple Method of Star Photography.

BY MRS. TOMKINS.

To any one with only a camera in their possession, star photography hardly seems to suggest itself, but being desirous of getting some observations, this seemed to offer a possible method, though no doubt to those with better apparatus it may appear rather the contrivance of an

amateur. Still it may interest some of those present, whose aspirations are small, to have a short account of how one was used for that work.

The camera happened to be a full plate, but a quarter plate instrument could be used in the same way, and being smaller would be easier to manage. To an ordinary strong framework, such as a tall stool, a board is attached by a hinge at the back to the edge of the framework, and in front a long moveable slot of wood moving up and down is fixed by a screw at any desired elevation. On this board, through a small hole in the middle, the camera is screwed by its own tripod screw in the usual way, and the apparatus is complete.

Take this out on a dark night, and by the aid of our star charts, having located the desired constellation and star or group to be taken, point the camera in that direction, sighting over the top of it, and move the board, on which is the camera, slowly up and down until some big guiding star is on the ground glass. Then change the ground glass for a piece of plane glass—a cleaned negative answers the purpose well—and by the aid of a focussing glass get the focus sharp and screw up tight in that position. This place can then be marked on the wood with a pencil and thus save trouble in finding it another night. Here a word on the focussing may be useful, as it requires to be very sharp. To get this, take beforehand the piece of plane glass and make a small scratch on one side of it. Hold it in front of a light, and look at the scratch from the other side of the glass with the focussing glass and regulate this up and down carefully till the focus is quite sharp, and keep the focussing glass in that place. It will then be ready to use on the stars.

Proceed in the usual way to put in and expose a negative, which will require to be backed to prevent halation. Keep the lens open as long as considered necessary, say three minutes, taking care not to shake the apparatus once the cap is off. The result will be trails of stars. The particular series of negatives referred to failed in their object, as they were taken at too long intervals apart. The idea was to photograph the constellation Perseus in order to observe the variation of light of Algol, β Persei. It seemed feasible that if a series of negatives were taken and the width of the trail compared with the other trails on the same negative, whose brightness does not vary, and these compared after reduction with the other negatives, a light curve could be found. Algol being well known, its curve is already well determined, but the method might be at least tried and the results would be interesting.

To measure the trails a micrometer is required, and after the measures have been reduced to a common denomination, they can then be compared. On the negatives it is not the length of the trail that is to be observed, but the width, and the brighter stars therefore make wider trails, the length being due to the length of time of exposure. The width again varies according to the colour of the star, a red star making a narrower trail than a blue one for instance, but these would be details for particular cases. Also a clear or cloudy night makes a difference in the relative size of all the trails, as an illustration a slide put on the sheet showed where a cloud passed over during exposure, partially obscuring the stars for a short time, and thus lessening the light as shown by the sort of dumbbell shape of the trails. Perhaps this can hardly be called deep science, but it forms quite an interesting method of using a camera.

Memoranda for Observers.

Standard Time of India is adopted in these Memoranda.

For the month of April 1911.

Sidereal time at 8 p.m.

	H.	M.	S.
<i>April 1st</i>	8	35	19
„ <i>8th</i>	9	2	55
„ <i>15th</i>	9	30	31
„ <i>22nd</i>	9	58	7
„ <i>29th</i>	10	25	43

From this table the constellations visible during the evenings of April can be ascertained by a reference to their position as given in the Star Chart.

Phases of the Moon.

	H.	M.
<i>April 6th</i> First Quarter . . .	11	25 a.m.
„ <i>13th</i> Full Moon . . .	8	7 p.m.
„ <i>22nd</i> Last Quarter . . .	0	6 a.m.
„ <i>29th</i> New Moon . . .	3	55 a.m.