smaller spot also opened from beneath in the way that the whole spot had done yesterday, only those openings took place every minute, remaining open from 5^s to 8^s of time. These separations were observed ten times during as many minutes, when this phenomenon ceased at this part of the spot, but the division between the spots now alternately enlarged, and partially closed, at intervals of a minute, remaining widely open each time from 5^s to 8^s. At several periods the two spots appeared to overlap each other, for they joined, and the edge of the smaller spot was indented. At $0^h\ 30^m$ the oscillations were abating; clouds came over. The spot A had also become divided since yesterday, and shewed signs of a further division, for in the lower of the two spots were two indentations, the one above and the other beneath. $1^h\ 7^m$. Again sunshine. The lower spot in A divides at intervals of 30^s, and closes again. There was also thought to be a light flowing from behind the *penumbra* at the upper edge."*

Extract of a Letter from W. S. Jacob, Esq. inclosing two Sheets of Diagrams of Solar Spots observed at Poona, in December 1848, *and January and February* 1849.

"I beg to call your attention to a remarkable phenomenon that I do not remember to have seen or heard of before, viz. an *annular* spot, which was seen on the 1st of February: it is marked *a* in the diagram of that date, and I have also sketched it on the margin on an enlarged scale: the dark spot was of an irregular pentagonal shape, with a bright speck not quite in the centre. I had a suspicion of a filament uniting it to the side of the penumbra, but the power of my instrument (a $3\frac{1}{2}$ feet) was insufficient to verify this. A similar phase has this day appeared in another spot, which will be shewn in the next sheet."

Captain Shea exhibited a book, "containing daily observations of the spots which pass over the sun's disc, taken with a three-foot telescope, by Carey." There are four rows of circles in each page, and the book, if complete, would shew a picture of the disc on every day when the sun is visible. The corresponding days in each year are under each other. Captain Shea says his drawings prove "that spots which disappear on the thirteenth day do *not* reappear on the thirteenth day afterwards, and that they cannot be considered as fixtures."

On the 9th and 10th of last November, Captain Shea "clearly

* The circumstance of streams of light crossing solar spots was seen by Mr. Lawson the day of the solar eclipse of May 15, 1836, in a spot whose *umbra* was of the shape of the ace of clubs, only the *penumbra* in this case was not of usual aspect, but resembled flocculent clouds. The streams of light closely resembled coruscations of *aurora borealis*. The *umbra* of this spot was 10080 miles in diameter, and the surrounding shade 32200 miles.

saw large streaks on the sun, having the appearance of water, extending from both eastern and western limbs about one-sixth of his diameter towards the centre, several small spots being distinctly visible on the streaks."

In some additional remarks upon the spots, Captain Shea says, "These spots take thirteen days to pass over the centre of the sun's disc, and although there is a constant succession of them, I have not been able to discover any day, for the last eighteen months, that the same number have appeared a second time as to size or relative position to each other."

A correspondent wishes to know where he can find the most complete account of the solar spots.*

Lunar Eclipse of March 8, 1849. By Professor Challis, *with the* Five-feet Equatoreal, *at the* Cambridge Observatory.

"The commencement of the eclipse was estimated to have taken place at $11^h\ 25^m\ 53^s$, Greenwich Mean Time, and the end at $14^h\ 25^m\ 43^s$, Greenwich Mean Time. The degree of obscuration of the limb at these two times was judged to be very nearly the same, but whether the shadow was in actual contact with the limb was quite uncertain. It is probable that the mean of the times, viz. $12^h\ 55^m\ 48^s$, Greenwich Mean Time, may be compared with considerable accuracy with observations made in a similar manner elsewhere.

"The disappearance of 82 *Leonis* was observed with great exactness to take place at $13^h\ 13^m\ 17^s{\cdot}62$, Greenwich Mean Time. The occultation occurred at the part of the limb which was most obscured by the eclipse, and as the moon's periphery was still very visible, I took particular care to notice whether there was any projection of the star on the moon's disk. The star made a kind of indentation of the limb without apparent diminution of brightness, and disappeared instantaneously, as soon as the periphery passed through the centre of its brightness.

"I noticed a faint, ruddy light spread over the eclipsed portion of the moon's disk, most conspicuous at the parts most remote from the boundary of the shadow. By looking at the moon with a small telescope, magnifying fourteen times, this appearance was rendered very sensible. I have never observed anything similar when the illumined part of the moon's disk has been visible between new moon and the first quarter. It seems hardly possible to doubt that the origin of this light is the same as that of the redness of the sky at sunrise and sunset."

* Photographic pictures surely would be attainable with a telescope mounted equatoreally, and carried by good clock-work. For researches into the *motion* of the spots, the positions should be determined micrometrically, or an image thrown on a screen might serve, with proper precautions. Reference should be made to the N and S, and to the preceding and following limbs.