stars, and was thus enabled to give the approximate altitudes and azimuths of the meteor when first seen and also at the end of its course. She heard no noise, but was first made aware of the meteor by an intense light falling on the ground in front of her, and from the movement of this light she inferred that the meteor must have travelled from the west towards south. When she looked up it was about south at an altitude of 60°. It then moved down towards the south-east ending at about 30° above the horizon.

If the altitude of the end point is not greatly over-estimated the actual height of the meteor above the earth at disappearance would be over 70 miles, and its distance from Kodaikanal nearly 90 miles. If any sound could have been heard at this distance, it would not have been perceived until 7 minutes had elapsed after the meteor had disappeared; it is probable, therefore, that Mr. Subramania was mistaken in supposing the sound he heard was due to the passage of the meteor.

The observations are not precise enough to give the radiant point of the meteor with any certainty; all that can be inferred is that it must have been in the western or north-western sky, perhaps not very far from the constellation Ophiuchus.

Note on Brooks' new Comet c 1911.

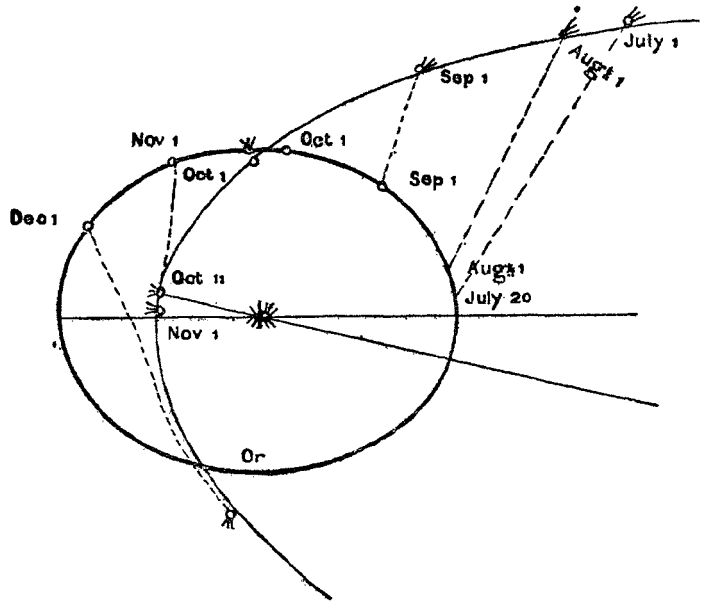
BY U. L. BANERJEE.

There has been a great stir in the astronomical world by the announcement that on the night of July 20, Professor Brooks of the Smith Observatory, Geneva, discovered a new Comet on the eastern heavens. Its position at 15 hour G. M. T. on that day was R. A. 22h. 13m. 40s. and declination N. 20° 57′, which placed it on the western side of the constellation Pegasus. It was then moving slowly northward.

Several observations have since been taken of this new Comet by different astronomers at different parts of the world and their results are summarised below. They have been arranged chronologically to give an idea of its progress round the Sun, its development from a feebly nebulous state into a strong nucleus, and the growth of its tail.

For better understanding the different phases of this Comet from the date of its discovery to the present date, I

reproduce below a diagram showing the orbits of the Comet in relation to that of the Earth, drawn from the elements computed by Mr. Young and Miss Aitken of the Lick Observatory :—



The paths of the Earth and the Comet approached each other until about Oct. 1, after which the Comet's rapid movement carried it quickly away, but during the month of October it approached the Sun and consequently got brighter and brighter all the time, making it quite visible to the naked eye.

July 25.—Mr. F. C. Leonard, President, Society for Practical Astronomy, Berlamont, noticed it as a faint hazy object, and took it for a very condensed nebulous star cluster, hardly distinguishable on a nebulous background. It was approximately circular and about 3′ to 3′-30″ in diameter, being very diffuse near the edges and appearing like a nebula or Comet with a stellar nucleus.

July 26, 27.—It moved towards Pegasi, with its centre more condensed showing indications of a stellar nucleus.

August 4.—Mr. Harold Thomson, New-castle-on-Tyne, noticed it as a nebulous patch of light with possibly a faint stellar nucleus, but could not detect any tail.

August 6, 7, 8.—Observations made at Berlamont with 3 inch. Telescope showed signs of a tail.

August 11.—Mr. F. W. Longbottom of Queen's Park, Chester, found the Comet steadily developing, the stellar nucleus now quite equalling mag. 6, the comma growing to an elliptical nebulosity some 4′-30″ along its major axis. An eccentrically placed straight tail extended over 1 degree towards the south.

August 15.—It was just barely visible to the naked eye, and Mr. W. F. Denning found it much brighter since.

August 17.—Observations taken at Chicago showed that it had passed from the constellation Pegasus into Cygms and gains sufficient brightness.

August 18.—Both Messrs. Longbottom and F. W. Barlow observed it by the naked eye. There was a distinct stellar nucleus which was not distinctly visible on account of the general increase in brilliancy towards the centre. The whole appeared to be somewhat elliptical, but no tail could be traced.

August 24.—Mr. F. W. Longbottom took photograph of the Comet and noticed a second tail, which he, however, ascribed possibly to the defect in the exposure.

Mr. F. C. Leonard of Leonard Observatory, Chicago, however, noticed a marked condensation to a nucleus. A fair number of stars could be seen shining right through the body of the Comet. It was circular, but there was no indication of a tail. It filled a large part of the field of view, and the matter the Comet extended from it a long distance in every direction.

August 26.—Mr. Leonard noticed slight indications of a real tail.

August 28.—Mr. H. H. Walters of Liverpool found it growing rapidly brighter and bidding fair to become a very interesting object. Its brightness was estimated as very nearly equal to the Andromada nebula. The photographs taken by him showed a small bright nucleus surrounded by an oval nebulosity.

August 29.—Mr. Leonard observed the Comet by the naked eye as a nebulous spot and detected a small tail.

August 31.—He found the Comet much more condensed and its nucleus condensation very obvious. An almost stellar nucleus developed, which was placed in the centre of the head. There were indications of a tail, and the Comet moved a fair distance during the observation. Its estimated diameter appeared to Mr. Alfred 6′ to 8′.

September 1.—The Comet was distinctly visible to the naked eye. Upon close study Mr. Leonard found it to be

generally fan-shaped, and possibly one or two small stars near by were visible through the tail, which in some respects appeared to be double, consisting of two parts separated by a small distance of very faint haze. The nucleus and matter appeared very condensed.

Mr. Alfred found the estimated diameter 10′ fully equal to 4 degree mag. stars in light. The margin appeared to him to be very diffuse.

September 2.—From a photograph taken by Professor Bernard of Yerkes Observatory, he found that the head of the Comet was nearly 510,000 miles in diameter, and the tail had an extent of about 8 degrees apparently equivalent to 10,000,000 miles. Because of its position in its orbit, this vast extent of the tail was not apparent, since it was inclined towards the Earth and was therefore foreshortened by perspective.

September 3.—Mr. Alfred found the diameter 12′ at least, but very faint near the margin.

September 4.—It was running north-west from the contellation Cygnus towards the constellation Draco.

September 15.—Mr. A. G. Black found the Comet very bright and about 12′ in diameter. The nucleus was distinct but not stellar. The magnitude was about 4.

Mr. Alfred also observed it on that very night and found its tail about 80′ and perhaps more. Centre of its head was much brighter. It seemed increasing rapidly in brightness, but not much in diameter.

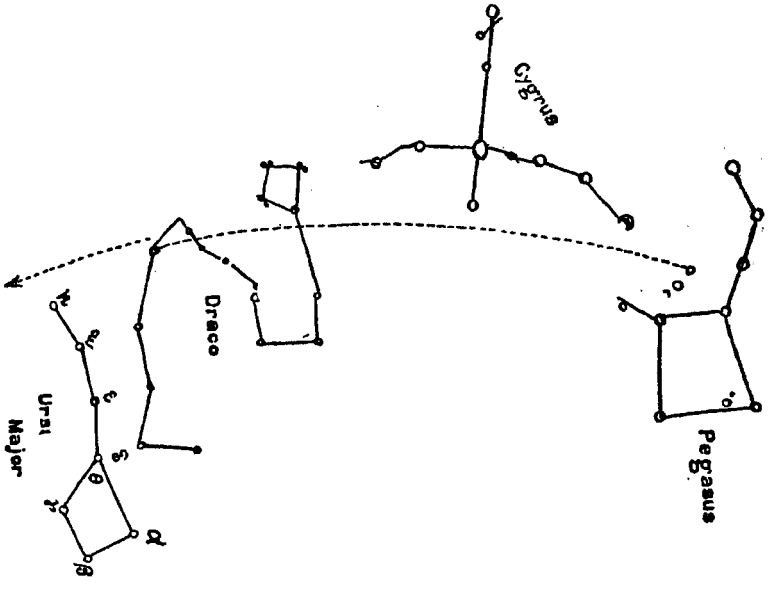
September 16.—Mr. S. E. Percival of Meniot noticed the coma condensed to the nucleus, which shone with the appearance of frosted silver reflecting a soft light. A small star was shining through it in the lower part. A distinctly streaked slight tail of about 4 degrees in length and ½ degree in diameter was visible. It was better seen by getting the coma just out of field. He also observed the Comet spectroscopically and saw three distinct bright bands of comeling spectra, the middle one was decidedly the brightest, and each of these bands was sharp towards the red ends and shaded off towards the violet. No continuous spectrum was visible.

September 24.—Observations were taken on this night by Messrs. N. K. Johnson of Canterbury and R. H. Butcher of Derby Road, Ansdell Lytham. The former found the tail about 2 degrees long by naked eye and 9 degrees by a binocular, standing vertically up from the coma. The tail was brighter at the centre than the edges. The nucleus was

not in the centre of the coma, but displaced in the direction of motion. Mr. Butcher could trace the tail for about 6 degrees. The comet closely resembled Halley's Comet, as viewed from South Africa, a few days after Periheteon Passage. It was bluish green in colour, while Halley's was rich golden yellow.

September 30.—Mr. M. B. Heath of Kingsbridge, S. Devon, had an excellent view of the Comet. With the naked eye the coma was of course obvious, and by careful observation several degrees of the tail could be seen; and by a binocular, the tail seemed 6 degrees in length, standing almost perpendicular to the horizon, but slightly inclined to the west. The telescope showed a bright nucleus, not stellar, surrounded by dense nebulosity, with a decided though faint tail, extending considerably beyond the length of the field. One star was visible through the tail.

Below is given a rough sketch, showing the path of the Comet from the west on July 20, the date of its discovery by Professor Brooks to the west of Ursa Major in the beginning of October:—



October 4.—Mr. Leonard located the Comet a short distance south-west of N Ursa Majoris. Viewed through an opera

glass the head of the Comet was very apparent and bright and the tail was visible for a considerable distance; through a telescope the nucleus appeared well defined, head better developed, the tail much brighter, especially near the head and wider in proportion to the latter. The nucleus appeared to be somewhat yellowish in colour.

October 12.—Very beautiful; the nucleus light greenish yellow in colour.

October 25.—Mr. C. Groves of Ronerdan Observatory found it a truly splendid naked eye object. The nucleus was quite bright and the long straight tail pointing nearly vertical, fully 20 degrees in length.

October 27, 28, 29.—Observed on three successive nights, it appeared very conspicuous, although suffering greatly with the glittering effulgence of the Venus. On 28th it appeared one of unexpected and unrivalled beauty, with a bright nucleus and a tail about equally bright and absolutely perpendicular. Seen through a field glass, one-third of the tail seemed to be as bright as the nucleus itself, verging away gradually and imperfectly into a dimmer yellow.

November 2, 3, 4.—Observed at Calcutta by the naked eye, the coma with the bright nucleus was distinctly visible. The tail extended to a great distance and through which some stars could be seen. The light of the Venus almost dimmed the tail to a certain extent, but obstructing the Venus, by means of the hand, the tail could be traced to a considerable distance from the coma.

The observations from Calcutta were not favourable during the summer nights, as the moonlight obstructed the dim light of the Comet, and latterly the moving clouds obstructed the vision altogether.

The Movements of the Planets in 1912.

BY H. HART.

The accompanying diagram will show the heliocentric positions of the planets on the day in each month on which