The Rev. John Moore Heath, M.A., Fellow and Tutor of Trinity College, Cambridge, was balloted for, and duly elected a Fellow of the Society.

The following communications were read:—

I. Description of a small Observatory constructed at Poona, in the year 1842, accompanied by observations of Eclipses, &c. of Jupiter's Satellites. By Lieut. W. S. Jacob, R.N.

The observatory was built for the purpose of containing a 5-feet equatoreal of Dollond. It was commenced in May 1842, and was completed in three months, at an expense of about £25. The building is of brick, 20 feet long from east to west, and 10 feet broad; the angles at the east end being cut off, so as to form part of an octagon. Instead of a rotatory roof, a folding one was constructed, which could be opened on any side that might be required. This was effected by means of a truncated octagonal pyramid, attached by hinges to an octagonal frame, laid on the top of the wall of the building, each side of the pyramid opening independently of the rest, and the top being closed by a flat octagonal shutter, attached to one of the sides of the pyramid by hinges. To support the instrument, a pier was built of brick, in the form of a T, at the ends of which were three stones, forming cubes of thirteen inches, for the foot of the stand.

The following are the observed phenomena of Jupiter's satellites, the longitude of Poona being 4° 55' 46" east, and the latitude 18° 30' 42" north.
I. The following communications concerning the Great Comet of 1843:


"Philadelphia, May 23, 1843.

Sir,—From the observations made at the High School Observatory, from March 11th to April 10th, the earliest and latest dates at which the place of the nucleus was measured, we have computed the elements of the orbit on the model of Gauss' Theoria Motus, without making any hypothesis respecting the particular conic section in which the comet moves. The result has been as follows:

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II. Eclipses and Occultations of Satellites, and Transits of Satellites and Shadows.

<table>
<thead>
<tr>
<th>Day</th>
<th>Sat.</th>
<th>Phenomenon</th>
<th>Sidereal Time</th>
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</thead>
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<tr>
<td>Aug. 10</td>
<td>I</td>
<td>Eclipse reappearance</td>
<td>21 7 57.7</td>
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<tr>
<td>Sept. 26</td>
<td>I</td>
<td>Ingr. of shad.</td>
<td>19 54 13</td>
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<td>first contact</td>
<td>19 56 24</td>
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<td>19 56 24</td>
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<td>21 3 36</td>
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<td>III</td>
<td>Egr. of sat.</td>
<td>19 12 19</td>
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<td></td>
<td></td>
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<td>19 15 30.5</td>
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<td>Oct. 3</td>
<td>I</td>
<td>Egr. of sat.</td>
<td>22 54 17</td>
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<td>22 57 7</td>
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<td></td>
<td>first contact</td>
<td>21 58 15</td>
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<td></td>
<td>last contact</td>
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<td></td>
<td>II</td>
<td>Eclipse reappearance</td>
<td>23 1 17</td>
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<tr>
<td></td>
<td></td>
<td>Occultation, immersion</td>
<td>20 42 23</td>
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<td>Ingr. of sat.</td>
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<td>23 8 26</td>
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