NORMAL EQUATIONS

$$
\begin{array}{rrrrrrrrr}
7{\cdot}500x & +6{\cdot}876y & -\cdot866z & +\cdot798u & +\cdot479v & -\cdot296w & -2{\cdot}320 & = & 0 \\
+6{\cdot}876x & +8{\cdot}716y & & +2{\cdot}575u & +\cdot076v & +\cdot159w & -2{\cdot}009 & = & 0 \\
-\cdot866x & & 1{\cdot}138z & +\cdot346u & +\cdot027v & -\cdot055w & +\cdot663 & = & 0 \\
+\cdot798x & +2{\cdot}575y & +\cdot346z & +3{\cdot}663u & -\cdot082v & -\cdot114w & -\cdot189 & = & 0 \\
+\cdot479x & +\cdot076y & +\cdot027z & -\cdot082u & +1{\cdot}395v & -1{\cdot}852w & -3{\cdot}700 & = & 0 \\
-\cdot296x & +\cdot159y & -\cdot055z & -\cdot114u & -1{\cdot}852v & +2{\cdot}647w & +5{\cdot}164 & = & 0
\end{array}
$$

From these the following corrections were obtained.

$$
\begin{aligned}
\delta\gamma &= -1{\cdot}11 \text{ km.} \\
\delta K &= +1{\cdot}34 \text{ km.} \\
\delta K_1 &= -1{\cdot}36 \text{ km.} \\
\delta e &= -\cdot006 \\
\delta\omega &= +0^\circ{\cdot}17 \\
\delta T &= -0{\cdot}013 \text{ day}
\end{aligned}
$$

The value of Σpvv for the normal places was reduced from 105 to 95. The probable error of a plate, based on the 30 employed in the solution, is $\pm$ 3·8 km. per second for the primary, and $\pm$ 5·3 for the secondary.

The following, then, are the revised elements, with their probable errors which are given as provisional for the time being.

$$
\begin{aligned}
P &= 15{\cdot}986 \text{ days} \\
e &= \cdot504 \pm\cdot025 \\
\omega &= 355^\circ{\cdot}2 \pm 7^\circ{\cdot}0 \\
\omega_1 &= 175^\circ{\cdot}2 \pm 7^\circ{\cdot}0 \\
K &= 63{\cdot}34 \text{ km.} \pm 3{\cdot}35 \text{ km.} \\
K_1 &= 73{\cdot}64 \text{ km.} \pm 3{\cdot}98 \text{ km.} \\
\gamma &= -13{\cdot}11 \text{ km.} \pm 3{\cdot}50 \text{ km.} \\
T &= \text{J.D. } 2{,}419{,}408{\cdot}027 \pm\cdot143 \\
a \sin i &= 12{,}026{,}000 \text{ km.} \\
a_1 \sin i &= 13{,}981{,}000 \text{ km.} \\
m \sin^3 i &= 1{\cdot}48 \odot \\
m_1 \sin^3 i &= 1{\cdot}27 \odot
\end{aligned}
$$