Where
$$x = \delta\gamma$$
$$y = \delta K$$
$$z = K.\delta e$$
$$u = K.\delta\omega$$
$$v = \frac{K}{(1-e^2)^{\frac{3}{2}}}\cdot\mu\cdot\delta T \;=\; [1\cdot 64427]\delta T.$$

NORMAL EQUATIONS

$$\begin{aligned}
7\cdot000x - 1\cdot906y + \cdot364z - \cdot157u + \cdot075v - 3\cdot110 &= 0\\
4\cdot301y + \cdot237z - \cdot319u + \cdot322v + \cdot578 &= 0\\
3\cdot140z + \cdot197u - \cdot220v - \cdot899 &= 0\\
3\cdot189u - 3\cdot138v - \cdot908 &= 0\\
3\cdot127v + \cdot714 &= 0
\end{aligned}$$

Whence
$$\delta\gamma = +\cdot54 \text{ km.}$$
$$\delta K = +\cdot10 \text{ km.}$$
$$\delta e = +\cdot021$$
$$\delta\omega = +30^\circ\cdot56$$
$$\delta T = +\cdot1405 \text{ day}$$

The value of Σpvv for the normal places was reduced from 11·1 to 6·2. One solution was sufficient, as the residuals obtained by substitution in the observation equations and by computing directly from the corrected elements agreed within 0·2 km. The probable error of a plate computed from the last two columns in the table of observations, using the formula

$$r = \pm\cdot6745\sqrt{\frac{\Sigma pvv}{n-1}\cdot\frac{n}{\Sigma p}},$$

is $\pm 3\cdot5$ km. per sec. No plates have been omitted, even though some of them were somewhat underexposed; one in fact having only three or four minutes exposure. If four of the largest residuals were omitted, the probable error would become $\pm 2\cdot9$. However, the probable error of 3·5 is very satisfactory considering the character of the spectrum for measurement.