NOTICE

ERRATUM

“A variant of Karmarkar’s linear programming algorithm for problems in standard form” by D. M. Gay

[*Mathematical Programming* 37 (1987) 81-90]

As Kurt Anstreicher (private communication) has pointed out, the $\mu(b)$ defined in (4d) does not necessarily increase monotonically with β as claimed on p. 85. At issue is whether $\mu(\beta) > 0$ implies both $\beta \geq \beta^*$ and the existence of $\hat{\beta} < \beta$ with $\mu(\hat{\beta}) = 0$. The reasoning after (5) shows that

$$\bar{\mu}(\beta) := \min\{(u + \beta v)^T \hat{x} : \hat{x} \geq 0, \hat{e}^T \hat{x} = 1, \hat{A}\hat{x} = 0\}$$

is monotonic with $\mu(\beta) \leq \bar{\mu}(\beta)$ and $\bar{\mu}(\beta^*) \leq 0$, so if $\mu(\beta) > 0$, there must be a $\bar{\beta}$ with $\beta^* \leq \bar{\beta} \leq \beta$ and $\mu(\bar{\beta}) \leq \bar{\mu}(\bar{\beta}) = 0$, and by continuity there is a $\hat{\beta}$ with $\bar{\beta} \leq \hat{\beta} \leq \beta$ and $\mu(\hat{\beta}) = 0$.