In conclusion, we have not detected any pulsations in the range ~2–2,000 s from GCX, a region which is known to contain several point sources. However, a search for periodicities <2 s and >30 min would be valuable.

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1. Kellogg, E., Gursky, H., Murray, S., Tannanbaum, H. & Giaconni, R. *Astrophys. J. Lett.* **169,** L99 (1971).
2. Eyles, C. J., Skinner, G. K., Willmore, A. P. & Rosenberg, F. D. *Nature* **257,** 291 (1975).
3. Ariel V Group, Univ. Birmingham. *IAU Circ.* No. 2934 (1976).
4. Lewin, W. H. G. *et al. Mon. Not. R. astr. Soc.* **177,** 83 (1976a).
5. Cruddace, R. G., Fritz, G., Shulman, S. & Friedman, H. *Astrophys. J. Lett.* **222,** L95 (1978).
6. Proctor, R. J., Skinner, G. K. & Willmore, A. P. *Mon. Not. R. astr. Soc.* **185,** 745 (1978).
7. Lewin, W. H. G. *et al. Nature* **267,** 28 (1977).
8. Cominsky, L., van Paradijs, J. & Lewin, W. G. H. (in preparation).
9. Li, F. K., Clark, G. & Markert, T. *Nature* **275,** 723 (1978).
10. Ives, J. C., Sanford, P. W. & Bell-Burnell, S. J. *Nature* **254,** 578 (1975).
11. Rosenberg, F. D., Eyles, C. J., Skinner, G. K. & Willmore, A. P. *Nature* **256,** 628 (1975).
12. Lewin, W. H. G. *et al. Mon. Not. R. astr. Soc.* **177,** 93 (1976b).
13. Córdova, F., Garmire, G. & Lewin, W. H. G. *Final Tech. Rep.* (NASA Grant NSG 5197, 1978).
14. Lewin, W. H. G. *Proc. COSPAR Symp.*, Innsbruck (1978).
15. Flowers, E. & Ruderman, M. *Astrophys. J.* **215,** 302 (1977).

The angular size of the high-redshift quasar Q0000−398

THE optically selected quasar[1] Q0000−398 has a redshift[2] $z = 2.827$. This quasar has been identified with a faint double radio source whose angular extent is 134 ± 40 arc s. As all known high-redshift radio-selected quasars have much smaller angular sizes, it has been suggested that the upper envelope of the angular size–redshift diagram of radio quasars is depressed by an anticorrelation of linear size and radio luminosity[3]. We show here, first that the radio source associated with Q0000–398 is compact and centred on the optical quasar, and second that there is no evidence in our data on other quasars for the suggested anticorrelation.

We observed Q0000−398 at 1,465 MHz with the partially completed VLA during 16–18 June 1978 as part of a larger programme to study radio emission from optically selected quasars. Nine scans of Q0000–398 were made at uniform intervals within 2 h of transit. All 15 pairs of the six antennas were correlated; baselines from 3,500 to 52,000 wavelengths were available. The synthesised beam is shown in Fig. 1*a*. The 'clean' map of Q0000−398, restored with an 18 by 3 arc s elliptical gaussian beam, is shown in Fig. 1*b*.

The only radio source in the field is at 1950.0 position $\alpha = 00\ 00\ 30.29 \pm 0.02$, $\delta = -39\ 48\ 47.6 \pm 0.8$. It is unresolved (<6 by 1 arc s) and has a 1,465 MHz flux density of 14 ± 2 mJy. The optical position of Q0000−398, measured from the Whiteoak extension of the National Geographic–Palomar Observatory Sky Survey print, is $\alpha = 00\ 00\ 30.26 \pm 0.13$, $\delta = -39\ 48\ 49.6 \pm 1.5$. Thus we identify Q0000−398 with a single compact radio source centred on the optical quasar. M. R. Gearhart (personal communication) has suggested that marginal observing weather coupled with the low elevation of the source may be responsible for the large angular size observed at 2,695 MHz with the NRAO three-element interferometer.

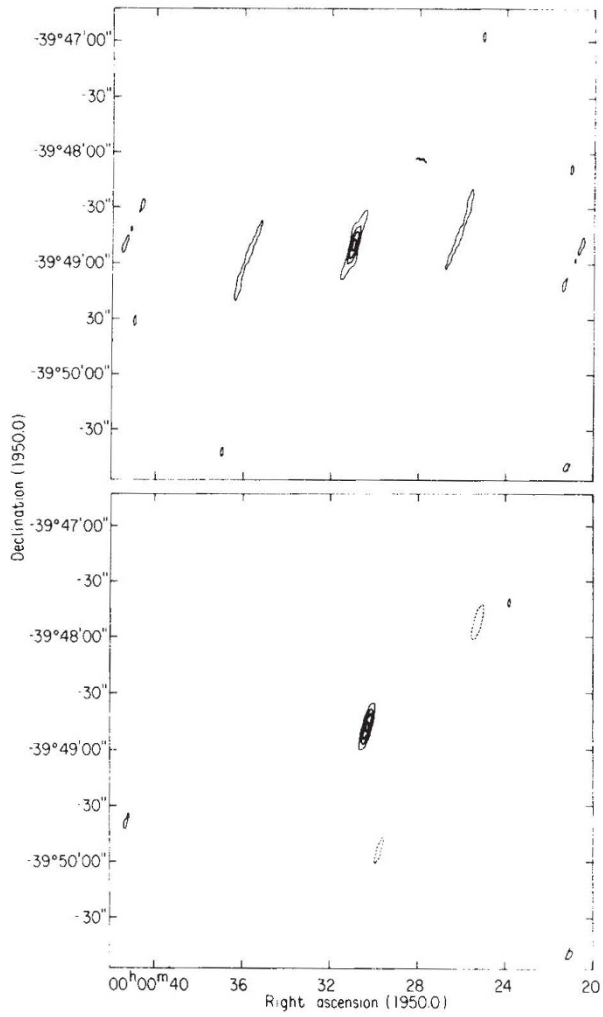

Fig. 1 *a*, Synthesised beam for the 1,465 MHz VLA observations of Q0000−398. *b*, The 1,465 MHz VLA map of Q0000−398. Negative contours are indicated by broken lines.

Our preliminary 1,465 MHz VLA maps of other high-redshift quasars indicate that the faint radio sources sometimes associated with optically selected quasars do not have larger angular sizes than the more luminous radio-selected sources.

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1. Smith, M. G. *Astrophys. J. Lett.* **206,** L125–L127 (1976).
2. Osmer, P. S. & Smith, M. G. *Astrophys. J.* **210,** 267–276 (1976).
3. Gearhart, M. R. & Pacht, E. *Nature* **266,** 819–822 (1977).

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