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The 35-km interferometer at NRAO was used at 2.7 GHz during 1974-1979 to determine pulsar proper motions. Observations from each epoch were reduced to pseudo-position vector offsets which include both unknown, and constant, absolute position errors for the pulsars and their reference sources, as well as the time-varying proper motion of the pulsars. The coordinate system for which the errors in the offset components are independent is chosen. Proper motions resulting from a linear fit to the offsets for five pulsars are given in Table 1.

The agreement between our measurements and those of Anderson, Lyne and Peckham (1975) -- 0329+54 and 1133+16 -- is excellent. Our determination of the motion of 0950+08 disagrees with that of Helfand et al. (1980); we find a transverse motion of only 20 km/s. The motion of 1929+10 in Table 1 agrees with the value in Helfand et al. (1980), but not with Gullahorn and Rankin's (1978) value. Our proper motion for 2021+51 is consistent with the motion proposed by Morris et al. (1979) based on an association with supernova remnant HB21, although our errors are large.

The phase stability of the instrument is sufficient to yield absolute positions with an accuracy of \sim 0".2 (Table 2). These measurements agree with determinations based on pulse timing with 0329+54 excepted.

REFERENCES

Anderson, B., Lyne, A.G., and Peckham, R.J.: 1975, Nature 258, pp. 215-217.
Gullahorn, G.E. and Rankin, J.M.: 1978, Astrophys. J. 225, pp. 963-969.
Helfand, D.J., Taylor, J.H., Backus, P.R., and Cordes, J.M.: 1980, Astrophys. J. 237, pp. 206-215.

Morris, D., Graham, D.A., Seiradakis, J.H., Sieber, W., Thomasson, P., and Jones, B.B.: 1979, Astron. Astrophys. 73, pp. 46-53.

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TABLE 1

PULSAR PROPER MOTIONS

PSR	d(pc)	μ _X ("/yr)	ε _X ("/yr)	μ _Y ("/yr)	ε _Y ("/yr)	PA _Y (deg)*
0329+54	1300	0.030	0.020	0.0008	0.0005	18.8
0950+08	100	$\left\{ \begin{array}{c} 0.018 \\040 \end{array} \right.$	0.008 0.030	0.023 0.047	0.004 0.005	38.0 -1.3
1133+16	100	170	0.030	0.345	0.020	15.5
1 929+ 10	100	0.001	0.030	0.070	0.002	40.7
2021+51	800	007	0.040	0.011	0.003	5.6

* Position angle of y-axis

TABLE 2

PULSAR INTERFEROMETER POSITIONS

PSR	RA*(1950.0)	DEC*(1950.0)
0329+54	h m s 03 29 11.073	54 29 37.55
0355+54	03 55 00.449	54 04 42.6
0950 + 08	09 50 30.560	08 09 44.70
1133+16	11 33 27.434	16 07 36.67
1 929+ 10	19 29 51.900	10 53 03.50
2020+28	20 20 33.279	28 44 43.43
2021+51	20 21 25.290	51 45 07.30

* Epoch 1975.4.