Title:	Radio observations of magnetic cataclysmic variables
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Abstract:	The NSF's Karl G. Jansky Very Large Array (VLA) is used to observe 122 magnetic cataclysmic variables (MCVs) during three observing semesters (13B, 15A, and 18A). We report radio detections of 33 stars with fluxes in the range 6–8031 μJy. Twenty-eight stars are new radio sources, increasing the number of radio detected MCVs to more that 40. A surprising result is that about three-quarters (24 of 33 stars) of the detections show highly circularly polarized radio emission of short duration, which is characteristic of electron cyclotron maser emission. We argue that this emission originates from the lower corona of the donor star, and not from a region between the two stars. Maser emission enables a more direct estimate of the mean coronal magnetic field of the donor star, which we estimate to be 1–4 kG assuming a magnetic filling factor of 50%. A two-sample Kolmogorov-Smirnov test supports the conclusion that the distribution function of radio detected MCVs with orbital periods between 1.5 and 5 h is similar to that of all MCVs. This result implies that rapidly-rotating (Pspin < 10 days), fully convective stars can sustain strong magnetic dynamos. These results support the model of that the change in angular momentum loss across the fully convective boundary at Porb ≈3 h is due to a change in the magnetic field structure of the donor star from a low-order to high-order multipolar field.
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