

# Radio emission properties of pulsars

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**ABSTRACT:** Most radio pulsars show more-or-less continuous trains of pulses as the radio beams from one or two magnetic poles sweep across the Earth, so making it very easy to discover them with periodicity searches, and to measure their rotation properties. However, recently, two new phenomena have been discovered. The first is a class of new objects called Rotating Radio Transient sources (known as RRATs) which produce very narrow flashes only a few milliseconds in duration, with mean intervals between them ranging from a few minutes to a few hours. Eleven of these ephemeral objects have been found, and there are strong indications that they are more numerous than normal pulsars by a substantial factor. The second phenomenon is that of a pulsar which is indistinguishable from a regular normal pulsar for perhaps one week, and which then switches off completely for about one month. This pattern repeats quasi-periodically, but, most importantly, the slow-down rate changes by 50% between the two phases, indicating massive changes in the magnetospheric particle flows between the two phases, and opening up new possibilities for studying the physics of the slow-down processes and radio emission.