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The Third Fermi-LAT Pulsar Catalog

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The Third Fermi Pulsar Catalog (3PC) is nearing completion and will provide timing solutions, pulse profiles, spectra, and ancillary data for about 250 gamma-ray detected pulsars. It is a tremendous undertaking, as it continues the geometric increase in source count established by 1PC (46 pulsars) and 2PC (117 pulsars). This large population reflects the application of ever-more-sophisticated search techniques that turn up very gamma-faint radio pulsars and a surprising number of radio-eclipsing binary systems (black widows, redbacks, tiddarens, and huntsmen!) Because radio emission in young pulsars is thought to identify the polar cap, the radio-loud population is particularly useful in constraining pulsar emission models. Indeed, the capability of finite-resistivity MHD models to produce the observed trends in 2PC data provided the first strong evidence for emission from the current sheet, beyond the light cylinder. We will present analogous results from 3PC for a much larger sample, as well as general properties of the population and further highlights from the analysis.

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