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News

Of prime importance



The number of computers that have some kind of internet connection grows every day. Many of these computers are left switched on when not in use. They spend long hours sitting idle in dark offices and studies.

In recent years, a number of online projects have emerged to harness the otherwise wasted CPU cycles of computers connected to the Internet. Perhaps the most famous of these is [SETI@home](#), an initiative of Berkeley's [Search for Extra-Terrestrial Intelligence](#) (SETI), but similar initiatives exist in other areas.

In [Issue 1](#) of *Plus*, we introduced the [Great Internet Mersenne Prime Search](#) (GIMPS) project. Like SETI, GIMPS uses CPU cycles volunteered by members of the public from around the world to collaborate in its search for [Mersenne Primes](#). These are prime numbers (numbers whose only factors are themselves and 1) which are also [Mersenne numbers](#), numbers which can be expressed as $2^n - 1$.

Unlike SETI, GIMPS recently achieved a confirmed success when a GIMPS supporter in Canada discovered the largest prime number currently known. Michael Cameron, 20, had been running GIMPS part-time on his 800MHz AMD T-Bird PC for only forty-five days when it made the groundbreaking discovery. The number itself, expressed as $2^{13,466,917} - 1$, contains a grand total of 4,053,946 digits. (Unfortunately for Michael, this is less than the ten million digits required to win the [\\$100,000 prize](#) offered for a ten-million-digit prime by the [Electronic Frontier Foundation](#).)

If you are interested in contributing to the GIMPS initiative, and perhaps finding another Mersenne prime, you can [download the software](#) from the GIMPS website.

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Plus is part of the family of activities in the Millennium Mathematics Project, which also includes the [NRICH](#) and [MOTIVATE](#) sites.