PrimeGrid's
AP27 Search

On 11 December 2016, 20:06:09 UTC, PrimeGrid's AP27 Search (Arithmetic Progression of 27 primes) found the progression of 26 primes:

$$142099325379199423+16549135*23\#*n \text{ for } n=0..25$$

The discovery was made by Koichi Soraku of Japan using a NVIDIA GTX 1070 on an Intel(R) Core(TM) i7-5775C @ 3.30GHz with 16GB RAM, running Microsoft Windows 10 Professional. This computer took about 27 minutes to process the task (each task tests 100 progression differences of 10 shifts each). Koichi is a member of the BOINC@MIXI team.

The progression was verified on 12 December 2016 10:44:25 UTC, by Dirk Kraemer of Germany using an NVIDIA GTX 760 on an AMD Phenom(tm) II X6 CPU running Microsoft Windows Vista. This computer took about 2 hours 22 minutes to process the task. Dirk is a member of the BOINC Confederation.

The AP26 will be listed in Jens Kruse Andersen's "Primes in Arithmetic Progression Records" page (http://primerecords.dk/aprecords.htm) under the section(s):

- All known AP24 to AP26 (http://primerecords.dk/aprecords.htm#ap24)

Credits for the discovery are as follows:

1. Koichi Soraku (Japan), discoverer
2. PrimeGrid, et al.
3. AP26, a primality program originally developed by Jaroslaw Wroblewski, adapted to BOINC by Geoff Reynolds with maintenance and improvements by Bryan Little and Iain Bethune.

Using a single PC would have taken decades to find this progression, so this timely discovery would not have been possible without the thousands of volunteers who contributed their spare CPU (and GPU) cycles. A special thanks to everyone who contributed their advice and/or computing power to the search.

Additional AP Information
How to search for 26 primes in arithmetic progression? by Jaroslaw Wroblewski
	http://www.math.uni.wroc.pl/~jwr/AP26/AP26v3.pdf
Primes in arithmetic progression - Wikipedia
	https://en.wikipedia.org/wiki/Primes_in_arithmetic_progression
Prime Arithmetic Progression - Wolfram MathWorld
	http://mathworld.wolfram.com/PrimeArithmeticProgression.html
arithmetic sequence - The Prime Glossary at the Prime Pages
	http://primes.utm.edu/glossary/page.php?sort=ArithmeticSequence

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The 26 terms of the AP26

142099325379199423+16549135*23#*n for n=0..25

23#=2*3*5*7*11*13*17*19*23=223092870

142099325379199423+16549135*223092870*0=142099325379199423
142099325379199423+16549135*223092870*1=145791319402366873
142099325379199423+16549135*223092870*2=149483313425534323
142099325379199423+16549135*223092870*3=153175307448701773
142099325379199423+16549135*223092870*4=156867301471869223
142099325379199423+16549135*223092870*5=160559295495036673
142099325379199423+16549135*223092870*6=164251289518204123
142099325379199423+16549135*223092870*7=167943283541371573
142099325379199423+16549135*223092870*8=171635277564539023
142099325379199423+16549135*223092870*9=175327271587706473
142099325379199423+16549135*223092870*10=179019265610873923
142099325379199423+16549135*223092870*11=182711259634041373
142099325379199423+16549135*223092870*12=186403253657208823
142099325379199423+16549135*223092870*13=190095247680376273
142099325379199423+16549135*223092870*14=193787241703543723
142099325379199423+16549135*223092870*15=197479235726711173
142099325379199423+16549135*223092870*16=201171229749878623
142099325379199423+16549135*223092870*17=204863223773046073
142099325379199423+16549135*223092870*18=208555217796213523
142099325379199423+16549135*223092870*19=212247211819380973
142099325379199423+16549135*223092870*20=215939205842548423
142099325379199423+16549135*223092870*21=219631199865715873
142099325379199423+16549135*223092870*22=223323193888883323
142099325379199423+16549135*223092870*23=227015187912050773
142099325379199423+16549135*223092870*24=230707181935218223
142099325379199423+16549135*223092870*25=234399175958385673

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About PrimeGrid

PrimeGrid is a distributed computing project, developed by Rytis Slatkevičius and currently administered by Iain Bethune, James Breslin, Scott Brown, Ulrich Fries, Charley Gielkens, Michael Goetz, Roger Karpin, Rytis Slatkevičius, and Van Zimmerman.

PrimeGrid is hosted by Rackspace, and their generous contributions have helped make this project possible.

PrimeGrid utilizes BOINC and PRPNet to search for primes with the primary goal of bringing the excitement of prime finding to the "everyday" computer user. Simply download the software and let your computer do the rest. Participants can choose from a variety of prime forms to search. With a little patience, you may find a large or even record breaking prime.

BOINC

The Berkeley Open Infrastructure for Network Computing (BOINC) is a software platform for distributed computing using volunteered computer resources. It allows users to participate in multiple distributed computing projects through a single program. Currently BOINC is being developed by a team based at the University of California, Berkeley led by David Anderson.

This platform currently supports projects from biology to math to astronomy. For more information, please visit BOINC: http://boinc.berkeley.edu

PRPNet

PRPNet is a client/server application written by Mark Rodenkirch that is specifically designed to help find prime numbers of various forms. It is easily ported between various OS/hardware combinations. PRPNet does not run each PRP test itself, but relies on helper programs, such as LLR, PFGW, phrot, wwww, and genefer to do the work.

For more information, please visit PrimeGrid's PRPNet forum thread: http://www.primegrid.com/forum_thread.php?id=1215

For more information about PrimeGrid and a complete list of available prime search projects, please visit: http://www.primegrid.com