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Four “Most Wanted” numbers from the wanted lists issued with Page 120 were factored on Page 121. NFS@Home factored 5,389– and 6,349–, both by the Special Number Field Sieve. Dodson found a 54-digit factor of 10,277– by the Elliptic Curve Method. Then Batalov and Dodson finished the 170-digit composite cofactor of 10,277– by the General Number Field Sieve. Womack, Dodson, Batalov and the group mersenneforum factored 2,956+, also by GNFS.

Four “More Wanted” numbers from the wanted lists issued with Page 120 were factored on Page 121. NFS@Home factored 2,979+ and 7,323– by SNFS. Batalov and Dodson factored 5,394+ and 2,1838L by SNFS.

One “Smaller-but-Needed” number was factored on Page 121. Leyland and Batalov factored 10,334+ by GNFS.

New wanted lists are enclosed.

The numbers 5,389– and 5,394+ factored in # 6023, # 6029 and # 6030 were the last numbers of the form $5^n \pm 1$ with $n < 400$ to be split.

ECMNET means Paul Zimmermann, Alex Kruppa, Torbjörn Granlund, Michel Quercia, Witold Grabysz, Vilmar Trevisan and many helpers who use the GMP-ECM program of Kruppa and Zimmermann. NFS@Home is a group led by Greg Childers.

There was one new champion for factoring Cunningham numbers on this page. Recall that a champion is one of the best two records in its class. The C187 of 2,956+ split in # 6031 was a new champion (second place) for General Number Field Sieve by size. A list of recent champions is enclosed.

The first holes done on Page 121 are in # 6023, # 6029, # 6030, # 6031, # 6039, # 6040, # 6043 and # 6048. The only second hole done on Page 121 is in # 6022. The third holes done on Page 121 are in # 6026, # 6028, # 6032 and # 6050. The fourth holes done on Page 121 are in # 6033, # 6034 and # 6041. The only fifth hole done on Page 121 is in # 6021.

The smallest new factor reported on Page 121 has 54 digits. See # 6040. The largest number factored on Page 121 has 302 digits. See # 6036.

See the URL <http://www.prothsearch.net/fermat.html> for Wilfrid Keller’s list of all known Fermat factors. No new factors have been found since Page 120 was mailed.

No new Mersenne primes have been found since the last page. The current largest known prime is $2^{43112609} - 1$. See the URL <http://primes.utm.edu/primes/> for Chris Caldwell’s database of the largest known primes (updated hourly).

See the URL <http://www.cerias.purdue.edu/homes/ssw/cun/index.html> for the online Cunningham book. The full text is available at the AMS web site: http://www.ams.org/online_bks/conm22.

Please send me any address changes.

Keep the factors coming!

Sam Wagstaff