

Department of Computer Sciences
Purdue University
West Lafayette, IN 47907
November 6, 2008

Five “Most Wanted” numbers from the wanted lists issued with Page 108 were factored on Page 109. NFSNET” factored 2,823– and 2,823+. Childers factored 5,331+. Buhrow factored 11,226+. Aoki found a small factor of 5,331– by the Elliptic Curve Method and Zimmermann finished it using the General Number Field Sieve. All the others were factored using the Special Number Field Sieve.

Five “More Wanted” numbers from the wanted lists issued with Page 108 were factored on Page 109. Silverman factored 2,1538M, Childers factored 2,832+ and Buhrow factored 2,1598L and 5,341–, all by SNFS. Batalov factored 2,1586L using GNFS.

Zimmermann factored the “Smaller-but-Needed” number 2,2286M by GNFS on Page 108.
New wanted lists are enclosed.

CWI means Peter Montgomery, Herman te Riele, Willemien Ekkelkamp and Andrey Timofeev at the Centrum voor Wiskunde en Informatica in Amsterdam. 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. NFSNET” is a group of factorers lead by Richard Wackerbarth and Paul Leyland. They are supported in the sieving effort by Bruce Dodson (Lehigh U), Jeroen Demeyer (U Gent) and Greg Childers (Cal State Fullerton), as well as the contributions of a number of additional volunteer sievers. See their URL <http://www.nfsnet.org> . Mersenneforum is a group with a section interested in factoring. See <http://www.mersenneforum.org> .

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 P127 of 6,392+ split in # 5654 was a new champion (first place) for Largest Penultimate Factor. A list of recent champions is enclosed.

The first holes done on Page 109 are in # 5648, # 5653, # 5655, # 5659, # 5660, # 5661, # 5662 and # 5664. The second holes done on Page 109 are in # 5642, # 5643, # 5646 and # 5663. The third holes done on Page 109 are in # 5633, # 5650, # 5656 and # 5657. The only fourth hole done on Page 109 is in # 5634. The only fifth hole done on Page 109 is in # 5639.

The smallest new factor reported on Page 109 has 54 digits. See # 5661. The largest number factored on Page 109 has 269 digits. See # 5645.

See the URL <http://www.prothsearch.net/fermat.html> for Wilfrid Keller’s list of all known Fermat factors.

Two new Mersenne primes have been found since the last page. The forty-fifth one to be discovered is $2^{43112609} - 1$. The forty-sixth to be discovered is $2^{37156667} - 1$. See the URL <http://primes.utm.edu/primes/> for Chris Caldwell’s database of the largest known primes (updated daily).

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