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Three "Most Wanted" numbers were factored on Page 85, all by the Number Field Sieve. From the wanted lists in Update 2.E, mailed on July 20, 2000, CWI factored the "Most Wanted" number 5,272+. Bob Silverman and CWI factored the "Most Wanted" numbers 10,194+ and 10,197−. These two base 10 numbers were the last two numbers with base > 2 remaining to be factored from the second edition. Now all numbers with base > 2 in the second edition have been factored.

Since only four wanted numbers have been factored since the last wanted lists were issued, no new lists are enclosed. There will be new lists in the third edition, which should be published soon. However, by popular demand, the "Smaller but Needed" list returns to the Champion page.

CWI means Henk Boender, Stefania Cavallar, Walter Lioen, Peter Montgomery, Herman te Riele and Dik Winter at the Centrum voor Wiskunde en Informatica in Amsterdam. ECMNET means Paul Zimmermann, Torbjörn Granlund, Michel Quercia, Witold Grabysz, Vilmar Trevisan and many helpers who use Granlund's GMP-ECM program. The Cabal includes Karen Aardal, Stefania Cavallar, Bruce Dodson, Jeff Gilchrist, Arjen Lenstra, Paul Leyland, Walter Lioen, Joel Marchand, Peter Montgomery, François Morain, Alec Muffett, Brian Murphy, Chris Putnam, Craig Putnam, Herman teRiele and Paul Zimmermann. NFSNET′ means CWI, Bob Silverman, Peter Montgomery, Alex Kruppa, Don Leclair, Ernst Mayer and the volunteer sievers Pierre Abbat, Ricardo Aguilera, Brian Briggs, Gary Clayton, David Crandell, Conrad Curry, Kelly Hall, Philip Heede, Jim Howell, Skip Key, Alex Kruppa, Samuli Larvala, Don Leclair, Ernst Mayer, Thomas Noekleby, Henrik Oluf Olsen, Marcio de Moraes Palmeira, Guillermo Ballester Valor and Paulo Vargas.

There were several new champions for factoring Cunningham numbers on this page. Recall that a champion is one of the best two records in its class. First let me mention an oversight in the letter for Page 84: I should have said there that the factorization of 10,191+ was a champion (second place) for the Special Number Field Sieve by size of number factored.

On Page 85, the factorization of 2,1526M and then that of 2,895− were both champions (first place) for the Quadratic Sieve. The factorization of 10,194+ set a new record (second place) for the Special Number Field Sieve by SNFS difficulty of number factored. The factorization of 2,773+ set a new record (first place) for the Special Number Field Sieve by SNFS difficulty of number factored and also for the Special Number Field Sieve by size of number factored. The factorization of 2,688+ set a new record (second place) for for the General Number Field Sieve by size of number factored. The factorization of 2,779− set a new record (first place) for for the General Number Field Sieve by size of number factored. A list of recent champions and the first holes in each table is given on another sheet.

The first holes done on Page 85 are in # 4524, # 4527, and # 4572. The only second hole done on Page 85 is in # 4540. No third holes were done on Page 85. The fourth holes done on Page 85 are in # 4526 and # 4550. The fifth holes done on Page 85 are in # 4562 and # 4573.

The smallest new factors reported on Page 85 have 38 digits. See # 4552 and # 4570. The largest number factored on Page 85 has 328 digits. See # 4545.

See the URL `http://vamri.xray.ufl.edu/proths/fermat.html` for Wilfrid Keller's list of all known Fermat factors.

See the URL `http://www.utm.edu/research/primes/largest.html` for Chris Caldwell's list of all of the largest known Mersenne primes.

If your address changes, please tell me.

Keep the factors coming!

Sam Wagstaff