Department of Computer Sciences Purdue University West Lafayette, IN 47907 September 17, 2010

Three "Most Wanted" numbers from the wanted lists issued with Page 116 was factored on Page 118. NFS@Home factored 12,254+ and 2,904+ by the Special Number Field Sieve. Batalov and Dodson factored 2,919- by SNFS.

Five "More Wanted" numbers from the wanted lists issued with Page 116 were factored on Page 118. NFS@Home and Batalov factored 2,1798L, NFS@Home factored 3,563- and 3,563+, and Raman factored 12,265+, all by SNFS. Edwards and King factored 6,353+ by the General NFS.

All four "Smaller-but-Needed" numbers were factored on Page 118. Batalov and Dodson factored 10,268+ and 2,2370L by SNFS and 2,1990M by GNFS. Schindel factored 2,955+ by GNFS.

New wanted lists are enclosed.

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 were no new champions for factoring Cunningham numbers on this page. Recall that a champion is one of the best two records in its class. A list of recent champions is enclosed.

The first holes done on Page 118 are in # 5925, # 5938, # 5943, # 5945, # 5946 and # 5954. The only second hole done on Page 118 is in # 5939. The third holes done on Page 118 are in # 5932 and # 5944. No fourth holes were done on Page 118. The only fifth hole done on Page 118 is # 5948.

The smallest new factor reported on Page 118 has 55 digits. See # 5936. The largest number factored on Page 118 has 313 digits. See # 5949.

See the URL http://www.prothsearch.net/fermat.html for Wilfrid Keller's list of all known Fermat factors. No new factors were found since those mentioned on the previous page.

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