

Department of Computer Sciences  
Purdue University  
West Lafayette, IN 47907  
April 6, 2022

Three “Most Wanted” numbers from the wanted lists issued with Page 139 were factored on Page 140. NFS@Home factored 3,674+, 5,461+ and 7,379–, all by the Special Number Field Sieve.

One “More Wanted” number from the wanted lists issued with Page 139 was factored on Page 140. NFS@Home factored 12,298+ by the SNFS.

Two “Smaller-but-Needed” numbers from the wanted lists issued with Page 139 were factored on Page 140. mersenneforum factored 3,748+ by the General NFS. Balfour factored 2,1353– by the SNFS.

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 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 151-digit prime factor of 7,889M C310 in # 6630 was the champion (first place) for largest penultimate prime factor. A list of recent champions is enclosed.

The first holes factored on Page 140 are in # 6608, # 6618, # 6622 and # 6632. The only fourth hole factored on Page 140 is in # 6610. No second, third or fifth hole was factored on Page 140.

The smallest new factor reported on Page 140 has 61 digits. See # 6624. The largest number factored on Page 140 has 321 digits. See # 6624.

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

No new Mersenne prime was found since the last page. The current largest known prime is  $2^{82589933} - 1$ . See the URL <http://primes.utm.edu/primes/> for Chris Caldwell’s database of the largest known primes (updated hourly).

See the URL <http://homes.cerias.purdue.edu/~ssw/cun/index.html> for the online Cunningham book.

Please send me any address changes.

Keep the factors coming!

Sam Wagstaff