Statistics for K_H-tables

For a number field K let K_1 be the Hilbert class field of $K_0 := K$, let K_2 be the Hilbert class field of K_1, ... and let K_H be the maximal soluble unramified extension of K.

There are 3043 real quadratic number fields K with discriminant $d_K < 10000$. The following shows the 1282 discriminants of those K with $K_H = K$. The results depend on GRH.

5, 8, 12, 13, 17, 21, 24, 28, 29, 33, 37, 41, 44, 53, 56, 57, 61, 69, 73, 76, 77, 88, 89, 92, 93, 97, 101, 109, 113, 124, 129, 133, 137, 141, 149, 152, 157, 161, 172, 173, 177, 181, 184, 188, 193, 197, 201, 209, 213, 217, 233, 236, 237, 241, 248, 249, 253, 268, 269, 277, 281, 284, 293, 301, 309, 313, 317, 329, 332, 337, 341, 344, 349, 353, 373, 376, 381, 389, 393, 397, 409, 412, 413, 417, 421, 428, 433, 437, 449, 453, 457, 461, 472, 489, 497, 501, 508, 509, 517, 521, 524, 536, 537, 541, 553, 556, 557, 569, 573, 581, 589, 593, 597, 601, 604, 613, 617, 632, 633, 641, 649, 652, 653, 661, 664, 668, 669, 673, 677, 681, 701, 709, 713, 716, 717, 721, 737, 749, 753, 757, 764, 769, 773, 781, 789, 796, 797, 809, 813, 821, 824, 829, 844, 849, 853, 856, 857, 869, 877, 881, 889, 893, 908, 913, 917, 921, 929, 933, 937, 941, 953, 956, 973, 977, 989, 997, 1004, 1013, 1021, 1033, 1041, 1048, 1049, 1052, 1057, 1061, 1069, 1077, 1081, 1084, 1097, 1109, 1112, 1117, 1121, 1132, 1133, 1137, 1141, 1149, 1153, 1169, 1177, 1181, 1193, 1201, 1208, 1213, 1217, 1228, 1237, 1244, 1249, 1253, 1273, 1277, 1289, 1293, 1301, 1317, 1321, 1324, 1329, 1333, 1336, 1337, 1349, 1357, 1361, 1381, 1388, 1389, 1397, 1401, 1409, 1432, 1433, 1437, 1441, 1453, 1457, 1461, 1468, 1473, 1477, 1481, 1493, 1497, 1501, 1516, 1528, 1529, 1532, 1541, 1549, 1553, 1561, 1569, 1577, 1589, 1592, 1597, 1609, 1613, 1621, 1633, 1637, 1657, 1661, 1669, 1673, 1676, 1688, 1689, 1693, 1697, 1709, 1713, 1721, 1724, 1733, 1741, 1753, 1757, 1777, 1784, 1789, 1793, 1797, 1801, 1816, 1817, 1821, 1829, 1837, 1841, 1852, 1857, 1861, 1868, 1873, 1877, 1889, 1893, 1909, 1912, 1913, 1916, 1933, 1941, 1948, 1949, 1964, 1969, 1973, 1977, 1981, 1993, 1997, 2008, 2012, 2017, 2033, 2049, 2053, 2069, 2073, 2077, 2092, 2104, 2113, 2129, 2137, 2141, 2149, 2157, 2161, 2168, 2181, 2188, 2189, 2201, 2217, 2221, 2229, 2237, 2252, 2253, 2264, 2269, 2273, 2281, 2284, 2293, 2297, 2309, 2317, 2321, 2333, 2341, 2348, 2357, 2361, 2369, 2377, 2381, 2389, 2393, 2396, 2413, 2417, 2428, 2433, 2437, 2441, 2449, 2453, 2456, 2461, 2469, 2473, 2476, 2477, 2481, 2488, 2489, 2497, 2513, 2517, 2521, 2524, 2537, 2549, 2569, 2572, 2573, 2577, 2588, 2593, 2609, 2617, 2621, 2629, 2633, 2641, 2648, 2649, 2653, 2657, 2661, 2681, 2689, 2693, 2721, 2729, 2732, 2733, 2741, 2749, 2753, 2757, 2761, 2764, 2773, 2776, 2789, 2797, 2801, 2833, 2837, 2841, 2861, 2869, 2872, 2876, 2881, 2893, 2897, 2901, 2909, 2921, 2933, 2936, 2949, 2953, 2956, 2957, 2969, 2972, 2973, 3001, 3004, 3013, 3017, 3032, 3037, 3041, 3049, 3053, 3057, 3061, 3064, 3073, 3089, 3093, 3097, 3101, 3109, 3113, 3117, 3148, 3149, 3153, 3169, 3189, 3193, 3197, 3209, 3217, 3241, 3244, 3257, 3269, 3273, 3292, 3301, 3308, 3309, 3313, 3317, 3329, 3337, 3352, 3353, 3361, 3369, 3373, 3377, 3389, 3397, 3401, 3409, 3413, 3421, 3433, 3436, 3437, 3448, 3449, 3452, 3453, 3457, 3461, 3469, 3473, 3489, 3493, 3512, 3513, 3517, 3521, 3529, 3532, 3533, 3541, 3544, 3548, 3557, 3561, 3581, 3593, 3613, 3617, 3628, 3629, 3637, 3641, 3644, 3661, 3669, 3673, 3676, 3677, 3693, 3697, 3701, 3704, 3709, 3713, 3733, 3749, 3761, 3769, 3777, 3781, 3788, 3793, 3797, 3817, 3821, 3829, 3832, 3833, 3837, 3841, 3849, 3853, 3868, 3881, 3884, 3896, 3901, 3909, 3917, 3921, 3929, 3932, 3937, 3949, 3953, 3964, 3989, 3992, 4013, 4021, 4024, 4037, 4049, 4057, 4061, 4073, 4076, 4093, 4101, 4109, 4117, 4124, 4129, 4133, 4153, 4156, 4157, 4169, 4177, 4184, 4189, 4197, 4201, 4204, 4213, 4217, 4237, 4241, 4249, 4252, 4253, 4261, 4269, 4273, 4289, 4297, 4309, 4313, 4317, 4333, 4337, 4341, 4349, 4373, 4376, 4377, 4393, 4397, 4412, 4413, 4417, 4421, 4429, 4449, 4457, 4461, 4492, 4497, 4501, 4513, 4517, 4529, 4533, 4541, 4549, 4561, 4568, 4569, 4577, 4593, 4601,

4604, 4609, 4613, 4621, 4629, 4637, 4652, 4657, 4661, 4673, 4677, 4681, 4696, 4701, 4713, 4721, 4733, 4737, 4741, 4748, 4769, 4781, 4789, 4792, 4793, 4801, 4813, 4817, 4821, 4829, 4837, 4856, 4861, 4873, 4877, 4881, 4897, 4909, 4924, 4937, 4952, 4957, 4969, 4973, 4989, 4993, 4997, 5001, 5009, 5021, 5029, 5033, 5036, 5048, 5053, 5077, 5093, 5097, 5101, 5113, 5116, 5129, 5132, 5137, 5144, 5149, 5153, 5164, 5169, 5173, 5177, 5189, 5197, 5201, 5209, 5212, 5221, 5228, 5233, 5237, 5257, 5272, 5276, 5277, 5293, 5309, 5349, 5357, 5361, 5377, 5381, 5393, 5401, 5413, 5433, 5437, 5441, 5449, 5461, 5464, 5469, 5489, 5493, 5501, 5509, 5528, 5533, 5541, 5549, 5557, 5561, 5569, 5573, 5581, 5596, 5601, 5609, 5633, 5641, 5653, 5657, 5669, 5677, 5689, 5692, 5693, 5701, 5708, 5717, 5721, 5737, 5749, 5752, 5753, 5756, 5761, 5773, 5788, 5789, 5793, 5801, 5804, 5813, 5816, 5833, 5836, 5849, 5857, 5861, 5869, 5873, 5881, 5884, 5893, 5897, 5909, 5921, 5932, 5937, 5948, 5953, 5961, 5969, 5977, 5981, 5996, 5997, 6008, 6009, 6013, 6017, 6029, 6033, 6037, 6041, 6044, 6049, 6073, 6077, 6089, 6101, 6117, 6121, 6124, 6169, 6172, 6173, 6181, 6189, 6193, 6197, 6217, 6221, 6229, 6233, 6236, 6249, 6257, 6261, 6269, 6277, 6281, 6284, 6296, 6297, 6301, 6313, 6316, 6317, 6329, 6332, 6333, 6337, 6349, 6353, 6361, 6373, 6377, 6389, 6393, 6397, 6421, 6428, 6429, 6433, 6449, 6457, 6469, 6473, 6476, 6488, 6493, 6509, 6521, 6529, 6533, 6537, 6541, 6553, 6569, 6577, 6581, 6589, 6593, 6609, 6621, 6629, 6652, 6653, 6661, 6668, 6673, 6677, 6689, 6701, 6709, 6712, 6717, 6729, 6733, 6737, 6753, 6761, 6769, 6781, 6793, 6796, 6797, 6801, 6821, 6829, 6833, 6841, 6857, 6861, 6869, 6872, 6881, 6892, 6904, 6913, 6917, 6933, 6937, 6941, 6961, 6973, 6977, 6988, 7001, 7009, 7013, 7017, 7036, 7037, 7041, 7061, 7069, 7073, 7096, 7097, 7109, 7113, 7121, 7129, 7132, 7133, 7149, 7153, 7169, 7177, 7181, 7193, 7197, 7201, 7213, 7217, 7233, 7237, 7253, 7256, 7269, 7277, 7288, 7292, 7297, 7309, 7313, 7321, 7324, 7333, 7341, 7349, 7352, 7357, 7369, 7377, 7393, 7401, 7409, 7417, 7433, 7457, 7468, 7477, 7484, 7489, 7493, 7509, 7516, 7517, 7529, 7541, 7549, 7561, 7576, 7577, 7589, 7593, 7597, 7609, 7613, 7617, 7621, 7629, 7637, 7649, 7653, 7661, 7669, 7681, 7697, 7717, 7724, 7729, 7737, 7741, 7757, 7768, 7773, 7781, 7789, 7793, 7804, 7829, 7841, 7849, 7853, 7864, 7877, 7901, 7909, 7916, 7928, 7933, 7937, 7941, 7949, 7961, 7977, 7981, 7989, 7993, 7996, 7997, 8009, 8012, 8013, 8044, 8053, 8061, 8081, 8089, 8093, 8117, 8129, 8133, 8137, 8141, 8152, 8153, 8156, 8157, 8161, 8189, 8193, 8197, 8201, 8209, 8213, 8221, 8233, 8237, 8248, 8252, 8257, 8261, 8269, 8273, 8293, 8297, 8301, 8312, 8317, 8329, 8332, 8341, 8348, 8353, 8369, 8377, 8389, 8401, 8408, 8409, 8413, 8417, 8429, 8444, 8453, 8457, 8461, 8504, 8509, 8513, 8521, 8524, 8529, 8537, 8549, 8553, 8557, 8561, 8573, 8609, 8617, 8629, 8641, 8657, 8669, 8677, 8681, 8693, 8696, 8709, 8716, 8717, 8728, 8737, 8741, 8753, 8777, 8781, 8797, 8809, 8812, 8813, 8817, 8821, 8824, 8849, 8861, 8873, 8881, 8889, 8893, 8913, 8921, 8929, 8933, 8941, 8953, 8956, 8969, 8972, 8977, 8981, 8984, 8997, 9001, 9013, 9017, 9033, 9037, 9041, 9053, 9057, 9068, 9069, 9097, 9109, 9121, 9137, 9148, 9157, 9161, 9173, 9201, 9209, 9221, 9233, 9237, 9241, 9244, 9249, 9253, 9257, 9277, 9304, 9313, 9329, 9337, 9341, 9349, 9353, 9356, 9357, 9368, 9377, 9388, 9397, 9404, 9421, 9433, 9437, 9449, 9461, 9473, 9481, 9484, 9489, 9493, 9496, 9497, 9501, 9521, 9532, 9533, 9557, 9561, 9569, 9573, 9589, 9601, 9609, 9613, 9617, 9629, 9637, 9641, 9644, 9649, 9661, 9677, 9689, 9692, 9697, 9713, 9721, 9733, 9753, 9761, 9769, 9777, 9781, 9784, 9788, 9793, 9817, 9848, 9853, 9857, 9901, 9913, 9917, 9921, 9929, 9941, 9949, 9957, 9961, 9969, 9973, 9977, 9989, 9993.

The following shows the 1536 discriminants of those K with $K_H = K_1$. The Galois group $\mathrm{Gal}(K_H/\mathbb{Q})$ is isomorphic to $C_2 \ltimes \mathrm{Cl(K)}$ where the involution inverts every element of $\mathrm{Cl}(K)$. The results depend on GRH.

40, 60, 65, 85, 104, 105, 120, 136, 140, 145, 156, 165, 168, 185, 204, 205, 220, 221, 229, 232, 257, 264, 265, 273, 280, 285, 296, 305, 312, 316, 321, 328, 345, 348, 357, 364, 365, 377, 380, 385, 401, 408, 424, 429, 440, 444, 445, 456, 460, 465, 469, 473, 476, 481, 485, 488, 492, 493,

505, 533, 545, 552, 561, 565, 568, 572, 577, 584, 609, 616, 620, 629, 636, 645, 665, 680, 685, 689, 696, 697, 705, 712, 728, 732, 733, 741, 744, 745, 748, 760, 761, 776, 777, 780, 785, 793, 805, 808, 812, 817, 840, 860, 861, 865, 872, 876, 885, 888, 892, 897, 901, 904, 905, 920, 924, 940, 949, 952, 957, 965, 969, 984, 985, 988, 993, 1001, 1005, 1009, 1016, 1020, 1032, 1036, 1037, 1045, 1064, 1065, 1068, 1073, 1085, 1093, 1096, 1101, 1105, 1113, 1128, 1129, 1144, 1148, 1157, 1164, 1165, 1173, 1180, 1185, 1189, 1192, 1196, 1205, 1209, 1212, 1221, 1229, 1240, 1241, 1245, 1256, 1257, 1261, 1265, 1272, 1276, 1281, 1288, 1292, 1297, 1304, 1308, 1309, 1313, 1320, 1340, 1345, 1353, 1356, 1365, 1373, 1384, 1385, 1393, 1405, 1416, 1417, 1420, 1429, 1436, 1448, 1464, 1465, 1469, 1480, 1484, 1489, 1496, 1505, 1509, 1513, 1517, 1533, 1537, 1544, 1545, 1560, 1564, 1565, 1576, 1581, 1585, 1596, 1601, 1608, 1612, 1624, 1628, 1641, 1644, 1645, 1649, 1653, 1660, 1672, 1677, 1685, 1704, 1705, 1708, 1717, 1720, 1729, 1736, 1745, 1749, 1752, 1756, 1761, 1765, 1768, 1769, 1772, 1781, 1788, 1804, 1833, 1848, 1853, 1864, 1865, 1869, 1880, 1884, 1896, 1897, 1901, 1905, 1921, 1928, 1929, 1932, 1937, 1945, 1961, 1965, 1976, 1985, 1992, 1996, 2001, 2013, 2021, 2024, 2029, 2037, 2040, 2041, 2044, 2045, 2060, 2065, 2072, 2076, 2081, 2085, 2089, 2093, 2101, 2105, 2108, 2109, 2117, 2121, 2136, 2140, 2145, 2152, 2153, 2165, 2172, 2173, 2177, 2184, 2185, 2193, 2204, 2213, 2216, 2220, 2233, 2236, 2245, 2248, 2249, 2257, 2261, 2265, 2280, 2285, 2289, 2296, 2301, 2305, 2316, 2328, 2329, 2332, 2337, 2344, 2353, 2360, 2364, 2373, 2380, 2392, 2397, 2408, 2409, 2424, 2429, 2440, 2444, 2445, 2472, 2485, 2492, 2501, 2504, 2505, 2508, 2509, 2533, 2536, 2540, 2545, 2552, 2553, 2557, 2561, 2581, 2584, 2585, 2589, 2604, 2605, 2613, 2616, 2620, 2632, 2636, 2665, 2668, 2669, 2677, 2680, 2684, 2685, 2696, 2697, 2701, 2705, 2712, 2713, 2716, 2717, 2728, 2737, 2760, 2765, 2769, 2780, 2785, 2792, 2796, 2805, 2812, 2813, 2821, 2824, 2828, 2829, 2845, 2849, 2857, 2860, 2865, 2877, 2892, 2905, 2908, 2913, 2917, 2920, 2924, 2929, 2937, 2941, 2945, 2965, 2968, 2981, 2984, 2985, 2993, 3005, 3009, 3016, 3020, 3021, 3029, 3036, 3048, 3052, 3065, 3068, 3077, 3080, 3081, 3085, 3112, 3116, 3121, 3128, 3129, 3133, 3137, 3144, 3157, 3160, 3161, 3164, 3165, 3173, 3176, 3181, 3192, 3196, 3201, 3205, 3212, 3221, 3224, 3228, 3229, 3233, 3237, 3245, 3253, 3256, 3260, 3261, 3265, 3272, 3277, 3281, 3288, 3289, 3293, 3297, 3304, 3305, 3320, 3324, 3333, 3336, 3340, 3345, 3349, 3356, 3365, 3368, 3372, 3385, 3404, 3405, 3416, 3417, 3432, 3441, 3464, 3477, 3484, 3496, 3497, 3505, 3516, 3545, 3553, 3565, 3569, 3576, 3580, 3585, 3589, 3592, 3596, 3597, 3601, 3605, 3608, 3612, 3621, 3624, 3633, 3640, 3649, 3653, 3656, 3657, 3685, 3688, 3689, 3692, 3705, 3729, 3736, 3737, 3740, 3741, 3745, 3756, 3765, 3768, 3772, 3785, 3801, 3804, 3809, 3813, 3820, 3836, 3845, 3848, 3857, 3864, 3865, 3869, 3873, 3877, 3880, 3889, 3905, 3912, 3913, 3916, 3928, 3941, 3944, 3945, 3948, 3957, 3961, 3973, 3976, 3977, 3980, 3985, 3997, 4001, 4008, 4009, 4012, 4017, 4028, 4029, 4033, 4044, 4045, 4053, 4065, 4069, 4072, 4081, 4088, 4089, 4092, 4097, 4105, 4120, 4121, 4136, 4137, 4141, 4145, 4152, 4161, 4168, 4172, 4181, 4188, 4193, 4209, 4216, 4220, 4229, 4233, 4236, 4245, 4265, 4268, 4277, 4280, 4281, 4285, 4296, 4301, 4316, 4321, 4328, 4344, 4345, 4348, 4353, 4357, 4360, 4364, 4381, 4385, 4389, 4396, 4405, 4408, 4409, 4424, 4433, 4440, 4441, 4444, 4445, 4453, 4456, 4465, 4469, 4472, 4476, 4481, 4493, 4504, 4521, 4537, 4540, 4552, 4553, 4556, 4565, 4573, 4584, 4585, 4588, 4589, 4597, 4605, 4632, 4633, 4636, 4645, 4648, 4649, 4664, 4665, 4668, 4669, 4684, 4685, 4697, 4705, 4709, 4712, 4717, 4728, 4729, 4744, 4749, 4757, 4760, 4764, 4765, 4773, 4776, 4777, 4780, 4796, 4808, 4828, 4841, 4844, 4849, 4853, 4857, 4865, 4876, 4885, 4888, 4889, 4892, 4893, 4904, 4908, 4917, 4921, 4929, 4933, 4936, 4940, 4945, 4953, 4956, 4972, 4981, 4984, 4985, 4988, 5005, 5016, 5017, 5020, 5032, 5037, 5052, 5057, 5061, 5064, 5065, 5068, 5069, 5073, 5081, 5084, 5089, 5105, 5109, 5117, 5128, 5133, 5141, 5160, 5161, 5165, 5176, 5180, 5181, 5185, 5192, 5196, 5205, 5208, 5217, 5224, 5240, 5241, 5244, 5245, 5249, 5253, 5260, 5261, 5269, 5273, 5281, 5285, 5288, 5289, 5297, 5305, 5308, 5313, 5317, 5320, 5321, 5333, 5336, 5345, 5352, 5353, 5356, 5368, 5369, 5384, 5385, 5388, 5389,

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