Zbl 354.10010
Erdős, Paul; Graham, Ronald L.
On the prime factors of $\binom{n}{k}$. (In English)
Fibonacci Q. 14, 348-352 (1976). [0015-0517]

Let $\binom{n}{k} = u_n(k)v_n(k)$, where $u_n(k)$ contains the prime factors $p < k$ and $v_k(n)$ those $\geq k$. Results:

I. $\max_{1 \leq k \leq n} v_n(k) = \exp(n/2 + o(n))$.

II. $u_n(k) > 1$ for some $k \leq (2 + o(1)) \log n$.

III. The value of k for which $u_n(k)$ is maximal satisfies $k = (1+o(1))(e/e+1)n$.

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Classification:
11B39 Special numbers, etc.
05A10 Combinatorial functions
11A41 Elemementary prime number theory