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This formula was discovered independently by Euler and Maclaurin in the 1730's. Though each gave important applications of the formula, neither Euler nor Maclaurin had an expression for the error term. The first rigorous treatment of the error term was given by Jacobi in 1834 in terms of Bernoulli polynomials. Somewhat earlier, in 1823, Poisson used Fourier series to find an expression for the error term. His formula is actually a particular case of what is known as the Poisson summation formula. In addition to these results, I shall discuss related developments of the same era. (Received September 20, 2000)