ABSTRACT. We prove that for any dynamical system (X, Σ, m, T), the maximal operator defined by

$$N^* f(x) = \sup_n \frac{1}{n} \# \left\{ 1 \le i : \frac{f(T^i x)}{i} \ge \frac{1}{n} \right\}$$

is almost everywhere finite for f in the Orlicz class $L \log\log L(X)$, extending a result of Assani [2]. As an application, a weighted return times theorem is also proved.