

MASS LOSS RATES FOR TWENTY ONE WOLF-RAYET STARS

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ABSTRACT

Mass loss rates have been derived for twenty one WR stars encompassing most subtypes in the WN and WC sequences, from measurements of their infrared free-free fluxes. The resultant mass loss rates show a range of only a factor of four. WC stars generally have larger mass loss rates than WN stars, the mean rates being $\dot{M}(\text{WC}) = 4.1 \times 10^{-5} M_{\odot} \text{y}^{-1}$ and $\dot{M}(\text{WN}) = 2.7 \times 10^{-5} M_{\odot} \text{y}^{-1}$. Optical and ultraviolet data have been used to estimate bolometric luminosities for a range of WR spectral types, and it is shown that the derived mass loss rates are too large to be powered by radiation pressure. The total kinetic energy ejected into the interstellar medium through mass loss during the WR phase of a massive star is estimated to be 7×10^{50} ergs, comparable to that of a supernova event.

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