

Targeting inaccurate atomic data in the η Car ejecta absorption

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Abstract

The input from the laboratory spectroscopist community has at many occasions improved the analysis of the η Car spectrum. The η Car ejecta have different characteristics ranging from a 760 K environment consisting of molecules and neutral elements to a 6400 K inner ejecta observed in predominantly singly-ionized iron-group elements. We have analyzed the ejecta spectrum using medium to high resolution HST/STIS and VLT/UVES spectra. Our analysis, based on classical curve-of-growths in combination with cloudy modeling, has targeted spectra such as V II, Ti II and Cr II where improved wavelengths and oscillator strengths were needed. We will show how new and improved set of atomic data have enhanced the accuracy of our spectral analysis and illuminate where more work still is necessary. This work has been supported through STIS GTO/HST GO programs and is a collaboration between NASA/GSFC, London Imperial College, Lund Observatory and Lund Laser Center.

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