SPECTROSCOPIC INVESTIGATIONS OF LUMINOUS EMISSION-LINE OBJECTS

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Abstract. Emission lines are frequently observed in the spectra of the high luminosity stars, indicating the presence of extended atmospheric envelopes. We are investigating the physical characteristics (differential expansion velocity, density, extension, mass loss) and the origin of these envelopes in relation to the high luminosity of the parent star, and its evolutionary stage. Some results are presented concerning Eta Car, S Dor, HD 34664, P Cyg, AG and HR Car, and two WR stars.

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TABLE I

Object	Sp. type	V	$B-V$	E_{B-V}	$(B-V)_c$	M_V	M_{bol}	Ca II abs.	Expansion velocity (km s^{-1})	Mass loss ($\mathfrak{M}_\odot$/y)	References
Eta Car	em.Fe$^+$	6.0	+0.6	1.1	−0.14	−10.5	−11.7*	0.35 i 0.97 e	250–500	3×10^{-2}	7,8,10,12–15
S Dor	em.Fe$^+$	10.35	−0.03	0.2		−8.7		1.1* P Cyg	90 –130		1,9
HD 34664 S22 LMC	em.Fe$^+$	11.75	+0.27	0.5		−8.4		<0.2*	≧30*		
P Cyg	B1Iae	4.80	+0.40	0.61	−0.21	−8.2	−10.0	0.42 i* 0.21 e	80–200	2×10^{-4}	2,5,17
AG Car	B0-A1Ie	6.7	+0.6	0.8	−0.2	−8.5	−10	0.49 i+(e)	40–170		4,6,7,16
HR Car	B e	8.5	+0.9	1.1		−8.0	−9.5	1.0 e+(i)	~100		3,7,16
HD 92740	WN 7	6.44	+0.03	0.23	−0.20	−6.7	−10.5	0.24 i	1200*	10^{-5}	7,11
HD 93131	WN 7	6.49	−0.06	0.14	−0.20	−6.3	−10	0.34 i	1100*	10^{-5}	7,11

Notes

S Dor : Data are referred to a minimum phase, see Alexander and Thackeray (1971).
HR Car : an early *B* type object, probably a supergiant.
HD 93131: Assumed $B.C. = -4^m$.

* New results

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