

RADIO OBSERVATIONS OF INTERSTELLAR NEUTRAL HYDROGEN CLOUDS

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The detailed relationship between optical interstellar absorption lines and 21-cm. observations is investigated in this paper.

Dr Guido Münch, of the Mount Wilson and Palomar Observatories, provided the list of six intermediate-latitude stars shown in Table 1. The spectra of these stars all show complex absorption lines due to interstellar Ca II. The 21-cm. line is measurable in four of the six regions, although the peak intensity is low in each case. It is noteworthy that for the first two stars on the list the radio velocity agrees closely with the velocity of an intense optical component. In view of the great difference in angular resolution, the failure to find correspondence in every case is not surprising.

Table 1. *Comparison of 21-cm. and optical interstellar lines*

Star	Galactic co-ordinates		Type	Mag.	Radial velocity (km./sec. relative to the sun)				
	<i>l</i>	<i>b</i>			Optical components of Ca II				
					21 cm.	(in order of decreasing intensity)			
HD 219188	52°	-51°	B2n	6.9	-9	-7,	+18,	(-29?)	
HD 215733	54°	-37°	B2	7.7	-10	-26,	-11,	-44,	-57
HD 203664	30°	-28°	B3n	8.3	+5	-8,	+66,	(-28?)	
HD 119608	289°	+42°	cB	7.3	-10	-3,	+18,	(-11?	+33?)
HD 91316	204°	+54°	cB0	3.8	—	-13,	-4,	+16	
HD 93521	150°	+64°	B3n	6.9	—	-11,	-53,	+5,	-34

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Discussion

Hagen: We have observed a local cloud at high latitude ($l = 328^{\circ}8$, $b = 53^{\circ}7$) with velocity of recession of 100 kc./s. and brightness temperature 20° , covering an area with diameter 3° .

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