

# RADIO EMISSION FROM SELECTED ALGOL SYSTEMS

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Radio emission from close binary systems has long been detected in Algol and other systems. RS CVn systems have been found to be the most powerful and active. The RS CVn binaries are also known to show strong chromospheric and transition region emission line fluxes, that are one or two orders of magnitude higher than those from single stars of similar spectral type. This enhanced activity seems to be connected to the rapid rotation due to the tidal interaction in the system. The Algol binaries are semi-detected close binary systems formed by an early type main sequence primary and a late type giant secondary, while in the RS CVn both components are late type stars of about the same mass, the secondary being a giant or subgiant. The Algol binaries and RS CVn differ also in their evolutionary history. However, since the spectral type and probably the internal structure of the secondary components of Algol appear to be similar to that of the secondaries of RS CVn systems, and they both are synchronous fast rotators in close binaries, we would also expect that the secondaries of Algol systems to show some kind of activity. Radio observations therefore to be the best way to look for activity in Algol systems similar to that of RS CVn systems.

A luminosity-limited survey of these Algol was carried out at VLA.<sup>1</sup> All observations were made at 6cm and consisted of 4 different runs, 4, 9, 12, 13 Relevant data on the systems and our results are shown in Table I. From our observations it appears clearly that the luminosity level of these algol systems is comparable with that of RS CVn systems.

Table I

Stars	HD	Radio Flux density mJy	$\sigma$ mJy	Distance Parsec	Radio Luminosity $10^{11}$ erg/sec Hz <sup>-1</sup>
YZ Cas	4161	≤0.25	0.09	81	≤2
RZ Cas	17138	3.25	0.05	75	21.9
AS Eri	21985	0.35	0.03	212	18.8
RZ Eri	30050	0.97	0.06	130	19.6
		2.31	0.06		46.0
R CMa	57167	0.36	0.10	25	0.27
UX Mon	65607	0.19	0.03	500	56
TT Hya	97528	≤0.08	0.02	182	≤3
δLib	132742	≤0.46	0.16	120	≤8
α CrB	139006	0.63	0.11	25	4.7
Tw Dra	139319	3.9	0.05	217	219
Ai Dra	153345	0.18	0.03	182	7.1
RY Aqr	203067	0.17	0.03	230	10.7
DL Vir		≤0.17	0.06	128	≤3

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