

УДК: 524.423:524.575

КРАТКИЕ СООБЩЕНИЯ

RADIAL SYSTEMS OF DARK GLOBULES IN THE  
ASSOCIATION CEP OB2

This work is the continuation of the preceding paper [1]. A rather full review of papers devoted to the investigation of isolated dark globules as well as globules composing radial systems (GRS — globules of radial systems) was given in [1], so that here we deal only with the globules of the association Cep OB2.

It was found in [1] that it is possible to select 4 systems of GRS in the association Cep OB2, namely *a*, *b*, *c* and *d*. It was also mentioned [1] that the most interesting were the systems which contain in their centre stars of late spectral types the systems *b*, *c* and *d*. It was interesting to look for the proof of the autonomy of these systems. The search for such a proof was the purpose of our programme of  $^{12}\text{CO}$  and  $^{13}\text{CO}$  observations of dark globules which was carried out during 1983—1984 on the 4.9 m radio telescope of the Millimetre Wave Observatory of the Texas University. The data concerning the radio telescope are given in [2]. The results of the observations are collected in Table 1.

The following data are given in the Table. The first column gives the number of globules; the second, third and fourth — the results of  $^{12}\text{CO}$  observations: the corrected antenna temperature [2], the length of the line and the radial velocity, respectively; the fifth, sixth, and seventh columns — the same values, but for  $^{13}\text{CO}$  observations; the eighth column — the name of the radial system, to which the globule belongs.

As we note from the Table, it is possible to distinguish strictly the systems *a*, *b* and *d* on the basis of similarity of radial velocities of the globules, situated in them (in the system *c* because of faintness of emission the velocity of only one globule — GRS 10 — was obtained). The contents of radial systems which were given in [1] after taking into account the data on radial velocities remain almost unchanged. We

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№	$T_A^*$ (K)	$\Delta v$ (km/s)	$V_{LSR}$ km/s	$T_A^*$ (K)	$\Delta v$ (km/s)	$V_{LSR}$ km/s	R. S.
1	0.89	4.55	-5.15	<0.3	—*	—	a
2	0.4	3.5	-3.7	<0.2	—	—	a
3	4.59	1.89	-5.33	0.69	2.40	-5.16	a
4	8.67	2.43	-5.06	7.41	1.69	-4.90	a
5	4.58	1.63	-4.03	1.09	1.31	-3.84	a
6	14.18	2.59	-7.81	5.26	1.71	-7.76	a
7	2.72	1.85	0.69	<0.3	—	—	a
8	1.90	2.47	6.85	0.99	1.25	7.21	b
9	0.79	3.38	6.65	<0.3	—	—	b
10	0.63	1.74	-2.82	<0.3	—	—	c
11	3.38	1.71	7.80	2.25	1.30	8.02	b
12	1.55/1.91	2.47/1.71	0.39/6.85	<0.3	—	—	a
13	1.97	1.52	-1.51	1.08	0.77	-0.79	a
14	4.41	7.14	1.28	4.46	2.39	0.76	a
15	2.38	1.89	4.96	0.84	1.54	4.93	b
16	1.51	1.33	6.91	0.76	0.89	7.08	b
17	2.53	1.90	5.14	1.22	1.09	4.95	b
18	<0.4	—	—	<0.2	—	—	c
19	<0.4	—	—	<0.2	—	—	b
20	7.65	1.50	-3.11	1.86	1.28	-3.00	a
21	<0.4	—	—	<0.3	—	—	b
22	<0.4	—	—	<0.3	—	—	c
23	<0.4	—	—	<0.3	—	—	a
24	1.18	1.30	-1.90	<0.4	—	—	a
25	1.89	1.26	-2.72	<0.3	—	—	a
26	8.28	2.86	-2.46	2.74	1.31	-1.78	a
27	5.10	2.67	-2.84	1.40	1.19	-2.38	a
28	8.21	2.43	-2.32	1.28	1.95	-2.47	a
29	2.36	1.68	-2.46	<0.4	—	—	a
30	<0.4	—	—	<0.3	—	—	c
31	3.94/1.75	1.90/2.47	-11/-1.7	2.53	1.18	-10.97	d
32	2.35	2.75	-1.64	1.51	1.34	-1.58	d

\* These results are omitted because of faintness of the signal.

need only one transposition — it is necessary to replace GRS 7 from the system *b* into the system *a*. It is possible to distinguish two subsystems in the system *a* (due to their radial velocities): I. — the globules GRS 1—6, and II. — the globules GRS 7, 12—14, 24—29. It is necessary to state that GRS 12 is projected on GRS 16, and as a result we have two values for the radial velocity of GRS 12: 0.39 km/s — the velocity of GRS 12 itself, and 6.85 km/s — the velocity of GRS 16. These two systems are also separated *spatially*.

The velocities of globules from the subsystem II are close to the velocities of GRS 31 and 32, it can be due to their simultaneous origin (perhaps they compose one whole dark cloud which was destroyed into pieces — dark globules — under the influence of bright stars).

In conclusion we can say that the data on radial velocities of dark globules confirm the fact that *there are four separate radial systems of dark globules in the association Cep OB2*.

*Радиальные системы темных глобул в ассоциации Cep OB 2.*

В работе представлены результаты  $^{12}\text{CO}$  и  $^{13}\text{CO}$  наблюдений темных глобул в ассоциации Cep OB 2, которые осуществлены на 4.9-м радиотелескопе обсерватории MWO (Millimetre wave Observatory) Техасского университета.

16 July 1985

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L I T E R A T U R E

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УДК: 524.5:523.64

ДВЕ КОМЕТАРНЫЕ ТУМАННОСТИ

Многие кометарные туманности были обнаружены в результате детального просмотра карт Паломарского обзора неба. В настоящей работе была сделана попытка расширить этот список, используя карты ближнего