

A Photometric Study of the Bright Cloud B in Sagittarius: III

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While continuing the study of variable red stars and stars with proper motions and the U, B, V photometry of stars in the bright cloud B in Sagittarius or projected in this central region of the Galaxy (see *Messenger* No. 10, p. 1), we detected, in 1978, three diffuse objects and a planetary nebula (see *Messenger* No. 15, p. 14). These objects were discovered on R plates (098-04 with filter RG630, $\lambda_{\text{eff}} \approx 6500 \text{ \AA}$) taken by H. E. Schuster and his collaborators at the ESO Schmidt telescope on La Silla.

With 7 more R plates obtained in 1979, we started a thorough study of all 18 R plates which are now available. This study permitted us to identify 20 more diffuse objects. The coordinates of these objects for the 1950 equinox and the position (X; Y in mm) on the POSS charts are given in table 1, and the identification charts are grouped in figure 1.

In figure 2, the position of these objects is indicated relatively to the known globular clusters and to the X-ray sources already discovered in this direction. The observational data α , δ and error boxes (shown here as circular areas) have been taken from the catalogue by AMNUEL *et al.* (P. R. Amnuel, O. H. Guseinov, Sh. Yu. Rakhaminov, 1979, *Astrophys. Journ. Suppl. Ser.* 41, p. 327).

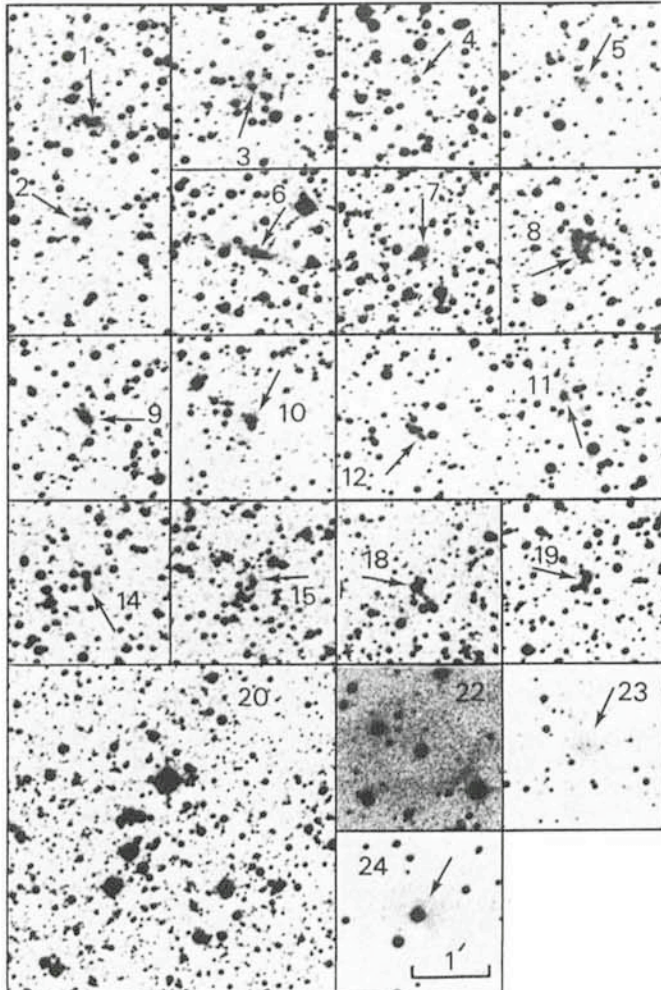


Fig. 1: Identification chart, in R, of 24 new diffuse objects.

Table 1

No.	α_{1950}	δ_{1950}	POSS		
			Charts	X _{mm}	Y _{mm}
1	17 ^h 05 ^m 3	-25° 38'	-24° 16 ^h 54	91.8	92.2
2	17 ^h 05 ^m 3	-25° 39'	-24° 16 ^h 54	91.5	91.1
3	17 ^h 06 ^m 3	-25° 38'	-24° 16 ^h 54	79.5	92.0
4	17 ^h 07 ^m 1	-26° 11'	-24° 16 ^h 54	70.7	63.0
5	17 ^h 08 ^m 1	-27° 08'	-24° 16 ^h 54	59.2	12.0
6	17 ^h 08 ^m 7	-25° 41'	-24° 16 ^h 54	52.3	89.7
7	17 ^h 08 ^m 8	-28° 48'	-30° 16 ^h 54	51.5	244.0
8	17 ^h 09 ^m 4	-26° 22'	-24° 16 ^h 54	42.8	53.0
9	17 ^h 09 ^m 5	-25° 44'	-24° 16 ^h 54	41.5	86.5
10	17 ^h 13 ^m 7	-26° 45'	-24° 17 ^h 20	299.4	29.4
11	17 ^h 14 ^m 2	-26° 46'	-24° 17 ^h 20	293.5	27.4
12	17 ^h 14 ^m 3	-26° 33'	-24° 17 ^h 20	292.0	27.0
13	17 ^h 15 ^m 1	-27° 51'	-30° 17 ^h 20	285.5	293.0
14	17 ^h 15 ^m 2	-26° 19'	-24° 17 ^h 20	281.5	52.6
15	17 ^h 15 ^m 3	-26° 15'	-24° 17 ^h 20	281.0	56.5
16	17 ^h 15 ^m 3	-27° 43'	-30° 17 ^h 20	282.5	300.0
17	17 ^h 15 ^m 5	-27° 47'	-30° 17 ^h 20	280.5	297.0
18	17 ^h 18 ^m 4	-28° 50'	-30° 17 ^h 20	245.0	239.0
19	17 ^h 22 ^m 2	-26° 10'	-24° 17 ^h 20	197.8	62.2
20	17 ^h 30 ^m 4	-29° 17'	-30° 17 ^h 20	106.3	217.0
21	17 ^h 32 ^m 5	-30° 20'	-30° 17 ^h 20	82.0	160.5
22	17 ^h 33 ^m 3	-32° 04'	-30° 17 ^h 20	75.0	68.0
23	17 ^h 41 ^m 8	-32° 45'	-30° 17 ^h 46	270.5	28.0
24	17 ^h 42 ^m 0	-32° 07'	-30° 17 ^h 46	270.2	62.9

Description of Objects

- No. 1 and 2: Nebulosities of elongated shape; visible on B and R plates.
- No. 3: Nebulosity with strong central condensation; visible in B and R.
- No. 4: Star surrounded by a nebulosity; visible in B and R.
- No. 5: Appears to be a globular cluster; visible on B and R plates.
- No. 6: Nebulosity of elongated shape whose aspect resembles that of a galaxy seen edge-on; visible in B and R.
- No. 7: Star surrounded by a nebulosity; visible in B and R.
- No. 8: Nebulosity; visible in B and R.
- No. 9, 10, 11 and 12: Stars surrounded by nebulosities; visible in B and R.
- No. 13, 16, 17 and 21: For descriptions of these objects, see (a) *Messenger* No. 15, p. 14; (b) C. R. Acad. Sc. Paris, 1978, *Série B*, p. 157 and 235.
- No. 14: Object resembling a planetary nebula; visible in B and R.
- No. 15: Nebulosity of circular shape with decreasing intensity from the centre to the edge. Could it be the nucleus of a globular cluster? Visible in B and R.
- No. 18: Planetary nebula? Visible in B, V and R.
- No. 19: Nebulosity elongated in the direction N-S; the object is faintly visible in B.
- No. 20: Visible on U, B, V, R plates, this object is most probably an open Galactic cluster.
- No. 22: Reflection nebula? Visible above all in R and UV.
- No. 23: Globular cluster? Visible in R, giving a very faint image in B.
- No. 24: Bipolar nebulosity? Visible in B and R.

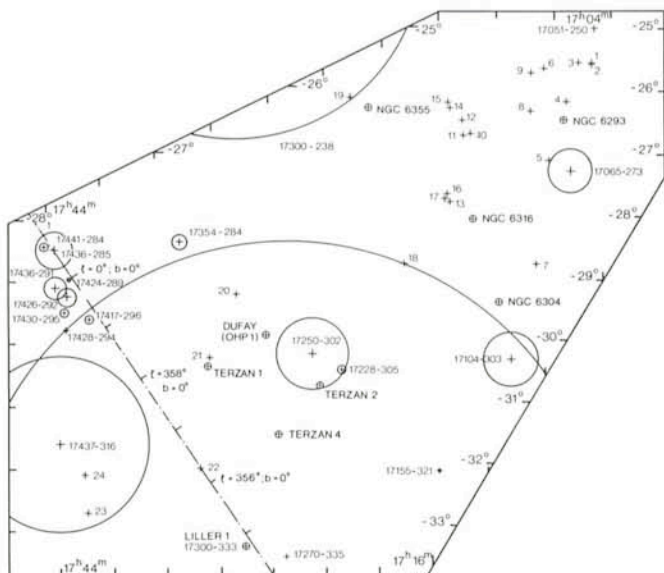


Fig. 2: Position of the 24 new diffuse objects relatively to the globular clusters and to the X-ray sources already known.

It is interesting to note that two objects, which appear to be globular clusters, are situated either *near to* (object No. 5 and the source 17065-273) or *in* the error box of an X-ray source (object No. 23 and the source 17437-316). Therefore, they might cause the X-ray emission, like the cluster TERZAN 2 which was recently identified with the source

Tentative Time-table of Council Sessions and Committee Meetings

The following dates and locations have been reserved for meetings of the ESO Council and Committees:

May 20	Users Committee
May 21	Scientific/Technical Committee, Geneva
May 22	Finance Committee, Geneva
May 23	Committee of Council, Geneva
June 2-4	Observing Programmes Committee, Geneva
June 27	Council, Brussels
November 4	Scientific/Technical Committee, Munich
November 5-6	Finance Committee, Munich
November 7	Committee of Council, Munich
November 27-28	Council, Munich
December 2-4	Observing Programmes Committee, Munich

17228-305 (E. Jonathan Grindlay, 1978, *Astrophys. Journ.* **224**, L 107).

In order to define more exactly the nature of these new diffuse objects, we plan further photographic, spectrographic and photometric observations with the ESO 3.6-m telescope on La Silla.

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ESO Slides

Two slide sets are at present available from ESO-Garching:

1. First Slide Set from the ESO 1-m Schmidt Telescope (20 x 5 cm black-and-white slides).
2. The ESO La Silla Observatory (20 x 5 cm colour slides showing the ESO installations on La Silla).

A third slide set showing 20 x 5 cm black-and-white slides taken with the ESO 3.6-m telescope was already announced in the June 1979 issue of the *Messenger*. However, this set will only become available in July this year.

The price for each slide set is DM 18.— (or the equivalent) for Europe, and US \$ 10.— by surface mail to all other countries, or US \$ 12.50 by airmail (to be paid in advance).

ESO Publications

Also available from ESO-Garching are the Proceedings of the Conference on "The Role of Schmidt Telescopes in Astronomy", Hamburg, 21-23 March 1972. Edited by U. Haug (price: US \$ 7.—).

A few copies of the following publications are still in stock at ESO-Geneva. Orders should be sent to: European Southern Observatory, c/o CERN, Attn. Miss M. Carvalho, CH-1211 Geneva 23.

ESO/SRC/CERN Conference on Research Programmes for the New Large Telescopes, Geneva, 27-31 May 1974. Edited by A. Reiz (price: US \$ 12.—).

ESO Conference on Optical Telescopes of the Future, Geneva, 12-15 December 1977. Edited by F. Pacini, W. Richter and R. N. Wilson (price: Sw.Frs. 40.—).

ESO Workshop on Modern Techniques in Astronomical Photography, Geneva, 16-18 May 1978. Edited by R. M. West and J. L. Heudier (price: Sw.Frs. 16.—).

ESO/SRC Conference on Applications of CAMAC to Astronomy, Geneva, 27-29 September 1978. Edited by M. J. Cullum and C. L. Stephens (free of charge).

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