the H I line with the Effelsberk 100-m telescope (Goerick *et al.* 1983) and the Westerbork synthesis radio telescope (Kalberla *et al.* 1984) indicate the possibility that at the shock front of the high velocity H I gas the molecular cloud is being constructed.

We observed Draco clouds in the ^{12}CO(1-0) and ^{13}CO(1-0) lines with the 4-m mm-wave telescope of Nagoya University. The ^{12}CO maps show a good agreement with the filamentary structure of the optical photograph. The estimation of the ^{13}CO column density indicates that each cloud in Draco clouds is lighter than the mass needed to be bounded by the gravitational force.

A NEW MOLECULAR CORE IN L1641

H. Takaba and Y. Fukui
Nagoya University, Japan

L1641 is a large dark cloud which extends 6.3 degree^2 to the south of the Orion nebula (Lynds 1962). This region contains a reflection nebula, NGC 1999, several emission line stars and Herbig-Haro objects and is thought to be a site of on-going star formation. A CO(J = 1-0) map obtained with the Nagoya 1.5 m telescope (Takano 1983) revealed that CO hot spots extend further to the north by $\sim$ 30' from NGC 1999. This suggests that L1641 may contain other regions of recent star formation. Therefore, we have mapped the L1641 cloud to investigate if there are other star-forming regions in it.

The observations were made with the 4 m millimeter wave telescope of Nagoya University. The half-power beam width was 2.7' at 110 GHz and the velocity resolution was 0.1 km/s. The ^{12}CO and ^{13}CO (J = 1-0) lines were mapped with 1.5' - 3' grid spacings.

Figure 1 shows the H_2 column density map derived from the ^{13}CO column density. Two large condensations are seen in the map; the southern condensation (R.A. = $5^h33^m48^s$, Dec. = -6°48'00") lies near NGC 1999 and the northern condensation (R.A. = $5^h34^m00^s$, Dec. = -6°25'30") has been revealed by the present observations. We have detected HCO^+ and HCN (J = 1-0) lines in the center of each condensation. This indicates the existence of dense cores ($n(H_2) \geqq 10^4$ cm^{-3}) in each condensation. We have also detected ^{12}CO high velocity wings (V_{wing} = 15 km/s at 100 m K level) in the center of the northern condensation. Recently, a luminous IRAS source ($L \geqq 200\ L_\odot$) and a Herbig-Haro object (Ogura 1985) were discovered near the center of the northern condensation. These signposts strongly indicate the detection of a new site of active star formation in L1641.

https://doi.org/10.1017/S0074180900095012 Published online by Cambridge University Press

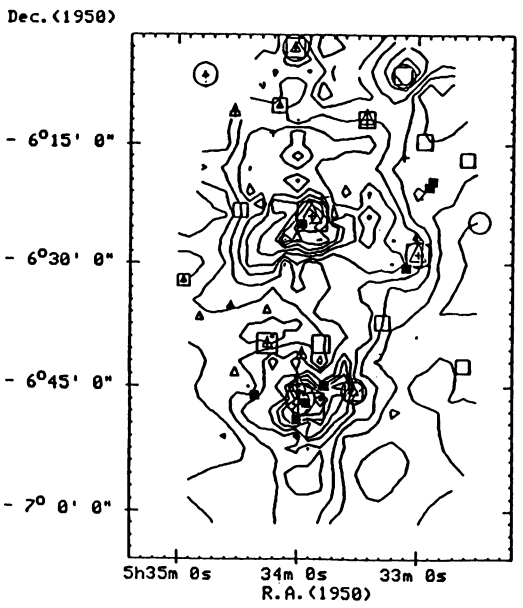

Fig. 1. $N(H_2)$ distribution in L1641. Contours are 3×10^{21} cm^{-2} steps. HH-objects are denoted as ■ and IRAS sources are denoted as + (12 μm), □ (60 μm), O (100 μm), and Δ(25 μm).

AN OPTICAL POLARIZATION STUDY OF THE BOK GLOBULE B361

Munezo Seki and Tatsuhiko Hasegawa
Astronomical Institute, Tohoku University
Sendai 980, Japan

B361 is an isolated, round-shaped globule in Cygnus. The results of FIR observations by Keene (1981) indicate that there are no internal heat sources while recent CO observations (Hirano *et al.* 1987) afford evidence for the existence of a few fragments in the core of the globule.

To obtain information on the evolutionary stage of B361 and on the role of magnetic fields in the globule evolution, we have made polarimetric observations of stars in the direction of B361 using the 74-inch and 36-inch telescopes of the Tokyo Astronomical Observatory. The distances for the program stars were adopted from Schmidt (1975) and Gottlieb (1978).

The dependence on distance of the Stokes parameters Q and U has been examined for 32 stars in the field or 2°×2° centered at the position of B361. Q and U for polarized stars increase abruptly at a distance of about 300 pc and remain constant (1.2 - 1.5%) between 300 and 700 pc, while almost all stars nearer than 300 pc are unpolarized.

https://doi.org/10.1017/S0074180900095012 Published online by Cambridge University Press