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PHOTOGRAPHIC UBV PHOTOMETRY OF H α EMISSION
 IN THE GAMMA CYGNI REGION

The investigated region around Gamma Cyg is rich in H α emission stars. The catalogue of the detected H α emission stars in this region compiled by us contains 98 stars. In 1982 we undertook the task to get spectral plates with an objective prism on the 40"/52" Schmidt telescope of the Byurakan Astrophysical Observatory to search for new H α emission stars in view of the greater possibilities of the used telescope than the telescopes used by other authors before and to check the variability of H α intensity in known H α emission stars. We discovered 18 new emission stars (Tsvetkova and Tsvetkov, 1982).

Here we present the identification charts of these 18 H α emission stars obtained from the O- and E- prints of the Palomar Observatory Sky Survey Atlas (Figure 1). North is at the top, east - to the left. Since H α emission stars No. 4 and No. 5 are difficult to be seen owing to the nebula where they are found, we present the chart obtained from 40"/52" Schmidt plate with a Kodak 103 emulsion through an RG 610 filter using a 60 minute exposition.

Table I

| No. | V | B-V | U-B |
|-----|--------------------|-------------------|-------------------|
| 1 | 18 ^m 00 | 0 ^m 38 | - |
| 2 | 17.50 | 1.95* | - |
| 3 | 15.53 | 1.31 | 0 ^m 15 |
| 4 | 13.21 | 0.40 | 0.32 |
| 5 | 14.78 | 0.94 | 0.70 |
| 6 | 17.00 | 0.80 | 0.16 |
| 7 | 15.51 | 2.88 | - |
| 9 | 17.00 | 0.73 | 0.27 |
| 11 | 16.38 | 1.43 | - |
| 12 | 17.36 | 0.59 | 0.53 |
| 13 | 17.54 | 0.78 | 0.10 |
| 14 | 16.69 | 0.60 | 0.62 |
| 16 | 18.17 | 2.90* | - |
| 18 | 15.30 | 0.94 | 0.72 |

* (B-V)_{POSS} magnitudes are given because the stars are below the limit of our B photometric plates.

| No. | Table II | | |
|--------------|---|---|---|
| | ΔV | ΔB | ΔU |
| 8 | 15 ^m .88 - 16 ^m .68 | 17 ^m .82 - 18 ^m .15 | 18 ^m .18 - 18 ^m .25 |
| 10 | 15.92 - 16.86 | 16.96 - 17.44 | 17.96 - 18.30 |
| V1391 Cyg=15 | 15.96 - 16.90 | 17.58 - 17.87 | 17.89 - 18.16 |
| 17 | 15.78 - 16.85 | 17.43 - 17.64 | 18.08 - 18.32 |

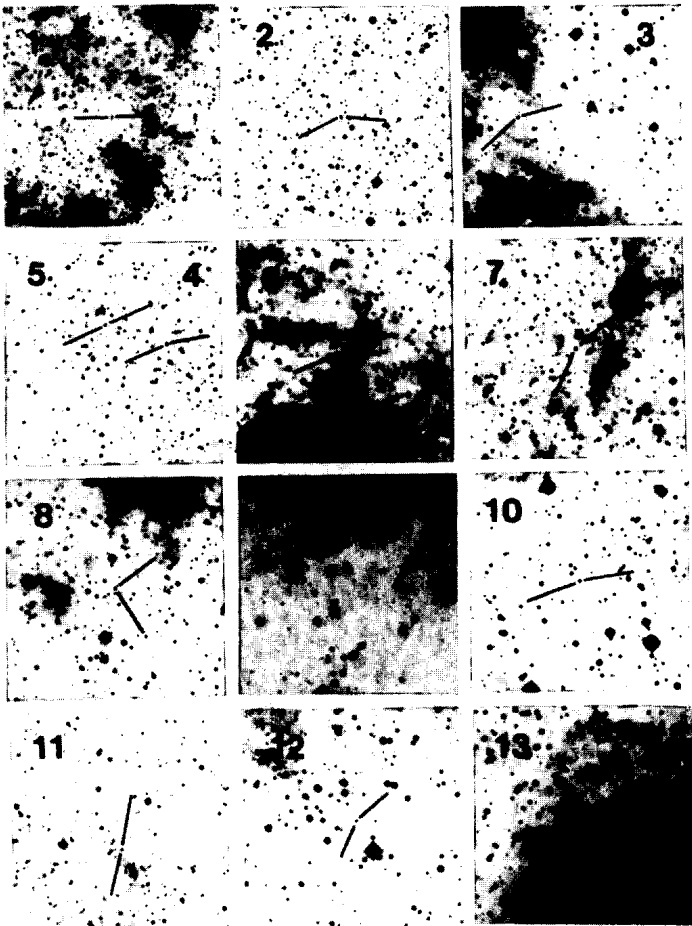


Figure 1

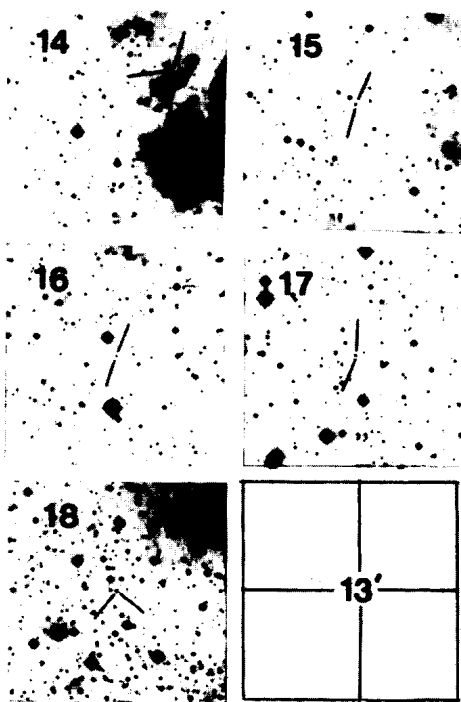


Figure 1 (cont)

Table I contains the data of the photographic UVB photometry of the H α emission stars carried out simultaneously with the photometry of the flare stars in this region, (Tsvetkova and Tsvetkov, 1988).

The mean quadratic errors of the magnitude determination for stars No. 5 and No. 11 do not exceed those for a photographic photometry. But the difference between B magnitudes estimated now and B_{POSS} magnitudes published in the earlier paper for these stars reached 1.^m1 and 1.^m5 magnitudes respectively. Such a big difference for the star No. 5 might be explained with the location in the emission nebula IC 1318a, and it is therefore impossible to determine the influence of the background on the Palomar print. For star No. 11 we can suspect the brightness changes between the epochs when the Palomar print and our photometric plates were obtained.

Brightness changes for the stars Nos. 8, 10, 15 and 17 were also noticed. Only one of them (No. 15) is known to be a variable star - V1391 Cyg. It is interesting to note that V1391 Cyg is classified as an RR Lyrae type star in the GCVS. The wavelength dependence of the amplitude does not support this classification. The ranges of variation are given in Table II. The same tendency of amplitudes as for V1391 Cyg is seen for all four stars in this table.

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References:

- Tsvetkova, K.P., Tsvetkov, M.K., 1982, IBVS, No. 2134.
Tsvetkova, K.P., Tsvetkov, M.K., 1988, IBVS, No. 3189.