Region A contains all the stars ($N_A = 249$) of the northern part of the sky and of the zodiac which are located on the side of the Milky Way containing the point of the spring equinox.

Region B is a similar region ($N_B = 262$) located on the other side of the Milky Way.

Region Zod A contains all the zodiacal stars ($N_{\text{Zod}\,A} = 124$) from region A and consists of six constellations: Gemini, Cancer, Leo, Virgo, Libra, Scorpius.

Region Zod B contains all the zodiacal stars ($N_{\text{Zod}\,B} = 168$) from region B.

Region C contains all the southern stars ($N_C = 116$) located on the same side of the Milky Way as region A.

Region D contains all the southern stars ($N_D = 143$) located on the same side of the Milky Way as region B.

Region M is the Milky Way ($N_M = 94$).

More details are found in Table 2.

Table 2

Region (G)	Baily's number of stars in a region before cleaning up the catalogue	Total number of stars in a region after cleaning up the catalogue
A	1–158, 424–569	249
B	286–423, 570–711	262
C	847–997	116
D	712–846, 998–1028	143
M	159–285	94
Zod A	424–569	124
Zod B	362–423, 570–711	168

Let us consider a "large" group of stars R and determine the parameters $\hat{\gamma}_R$ and $\hat{\varphi}_R$ using the above relation (4) where one should replace G by R.

THEOREM 1. *Let us suppose that for all stars $i \in R$, the parameters γ_i and φ_i are equal for all i (see (1) and (2)) and coincide with γ_R and φ_R, respectively. Then the values $\hat{\gamma}_R$ and $\hat{\varphi}_R$ have the following properties:*

(1) *$\hat{\gamma}_R$ is a nonbiased estimate of the value γ_R having a normal distribution with a variation*

$$\delta^2(\hat{\gamma}_R) = d\left[N_R\left(s_{20}\cos^2\varphi_R + 2d_0\cos\varphi_R\sin\varphi_R + c_{20}\sin^2\varphi_R\right)\right]^{-1},$$