TABLE 2

STELLAR SOURCES USED FOR GS MEASUREMENTS

Name	α_{2000}[a]	δ_{2000}[b]	Δm[c]	b[d]	θ[e]
Castor	7 34	31 53	2.1	0.19	4.0
γ Leo	10 20	19 50	1.3	0.16	4.5
ζ Uma	13 24	54 56	1.6	0.15	14.4
δ Ser	15 35	10 32	0.9	0.20	4.0
ζ Cbr	15 39	36 38	0.9	0.20	6.4
95 Her	18 01	21 36	0.4	0.25	6.3

[a]Right ascension in hours and minutes.

[b]Declination in degrees and arc minutes.

[c]Visible magnitude difference.

[d]See text and equation (24) in AC09.

[e]Angular separation in seconds of arc.

the observational parameters is as follows: the relative error is an increasing function of the turbulence altitude h, the double star separation θ, the conjugation distance d and the magnitude difference Δm of the double-star components. The relative error decreases as the telescope diameter D increases. The ratio e of the secondary over the primary mirror diameters has an influence on the shape of the plot ϵ vs. h, as can be seen in Figure 5 of AC09. For the sake of consistency with AC09, the magnitude difference of the stellar components is expressed through the parameter b defined by equation 24 in AC09. The values of D and e for the telescopes used in the OAN-SPM GS measurements are given in Table 1 and the stellar sources in Table 2.

The vertical profile of the relative error, $\epsilon(h)$, has been computed for the corresponding parameter values of the campaigns. The profiles are plotted in Figure 1. The percentage of data taken with each parameter set is indicated in the corresponding frame. The relative error is most of the time between 0.05 and 0.25 (5% to 25%). However, when ζ Uma is used (last two frames), ϵ reaches very high values at high altitude.

The correct $C_{\rm N}^2(h)$ are obtained by multiplying the original profiles by $1/(1+\epsilon(h))$. Each of the 6414 $C_{\rm N}^2$ profiles was so corrected.

The uncertainty of the statistical values given throughout the paper was estimated using the bootstrap method (Efron 1982), as explained in Appendix A of A04.

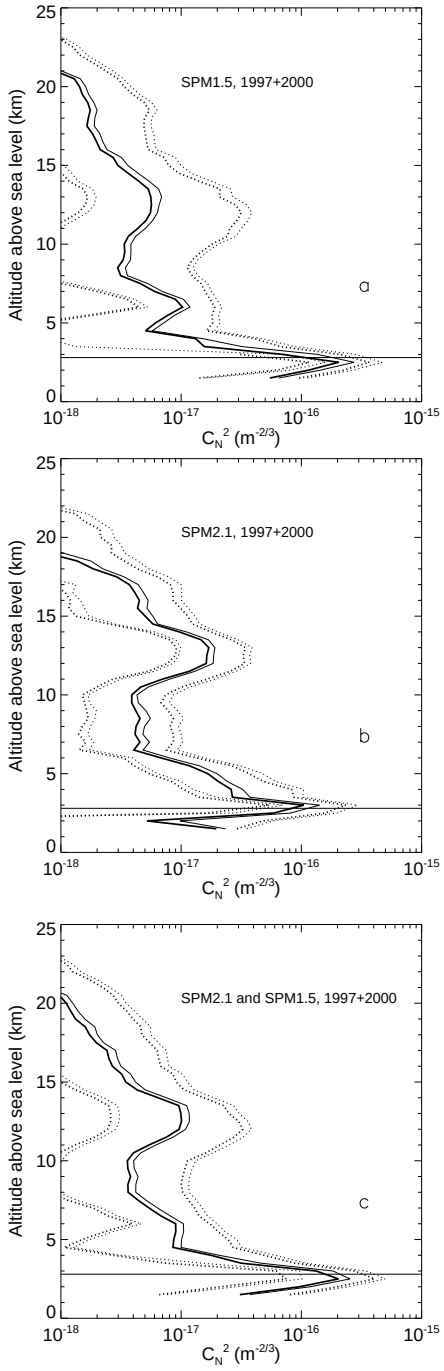

Fig. 2. Median (full line), 1st and 3rd quartiles (dashed lines) of the $C_{\rm N}^2(h)$ values obtained with the GS at the (a) 1.5mT, (b) 2.1mT and (c) both telescopes, during the 1997 and 2000 campaigns. Bold and thin lines correspond the corrected and non-corrected values, respectively. The horizontal axis represents $C_{\rm N}^2$ values, on a logarithmic scale, and the vertical axis represents the altitude above sea level. The horizontal lines indicate the observatory altitude. Dome seeing has been removed.