Chapter 2 : Horizontal distributions of monthly mean quantities (Ⅱ) : year to year variation

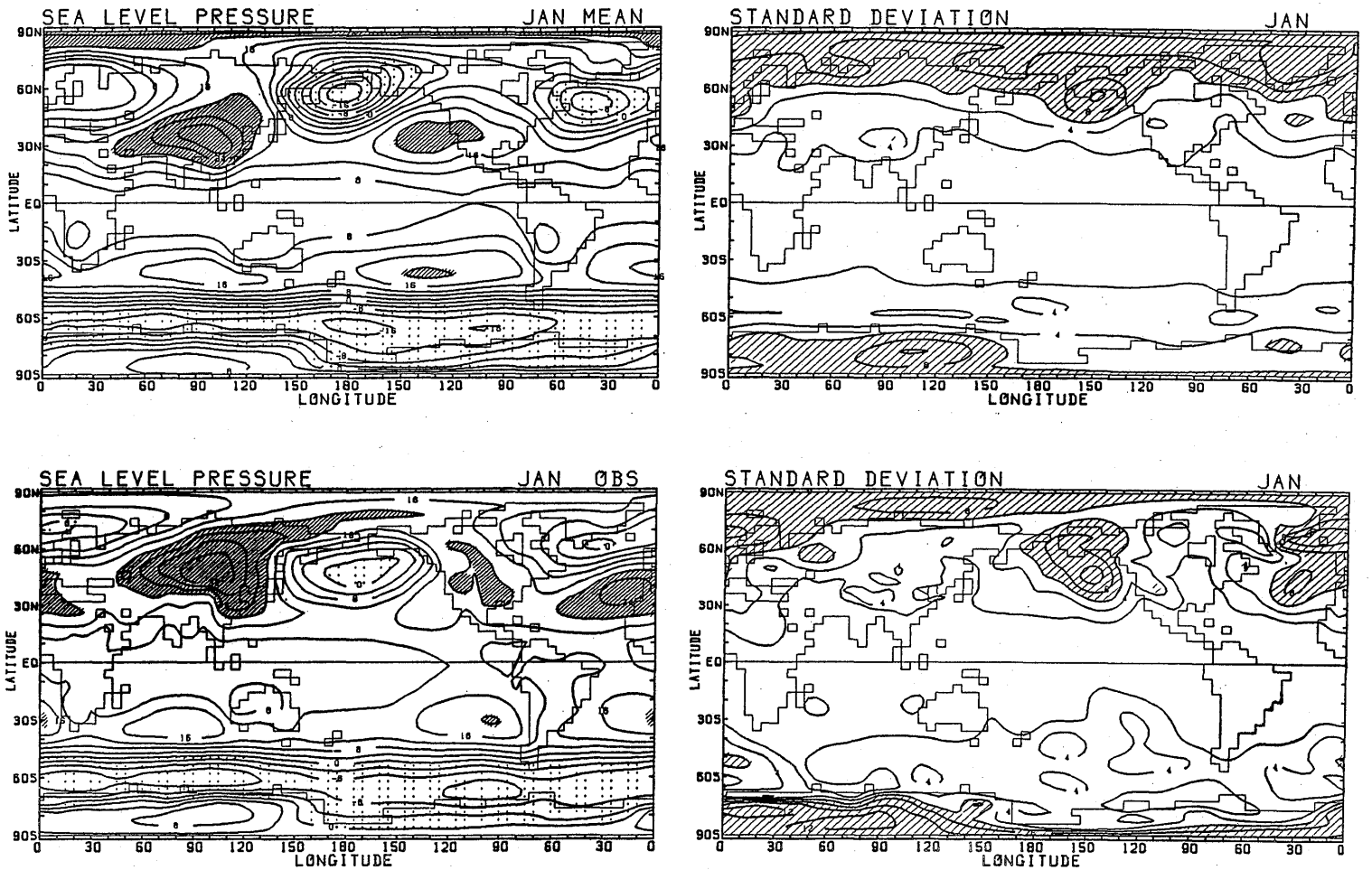

Fig. 2.1.1 Ensemble average of the monthly mean sea level pressure (upper left panel) and the standard deviation from the ensemble average (the upper right panel) for model January. The lower panels give corresponding climate values obtained from the analyzed data of the ECMWF for the period from 1980 to 1984. The contour interval of the lefthand panels is 4 mb. The area over 1020 mb is shaded, that below 1000 mb is dotted. The contour interval of the righthand panels is 2 mb. The area over 6 mb is shaded.

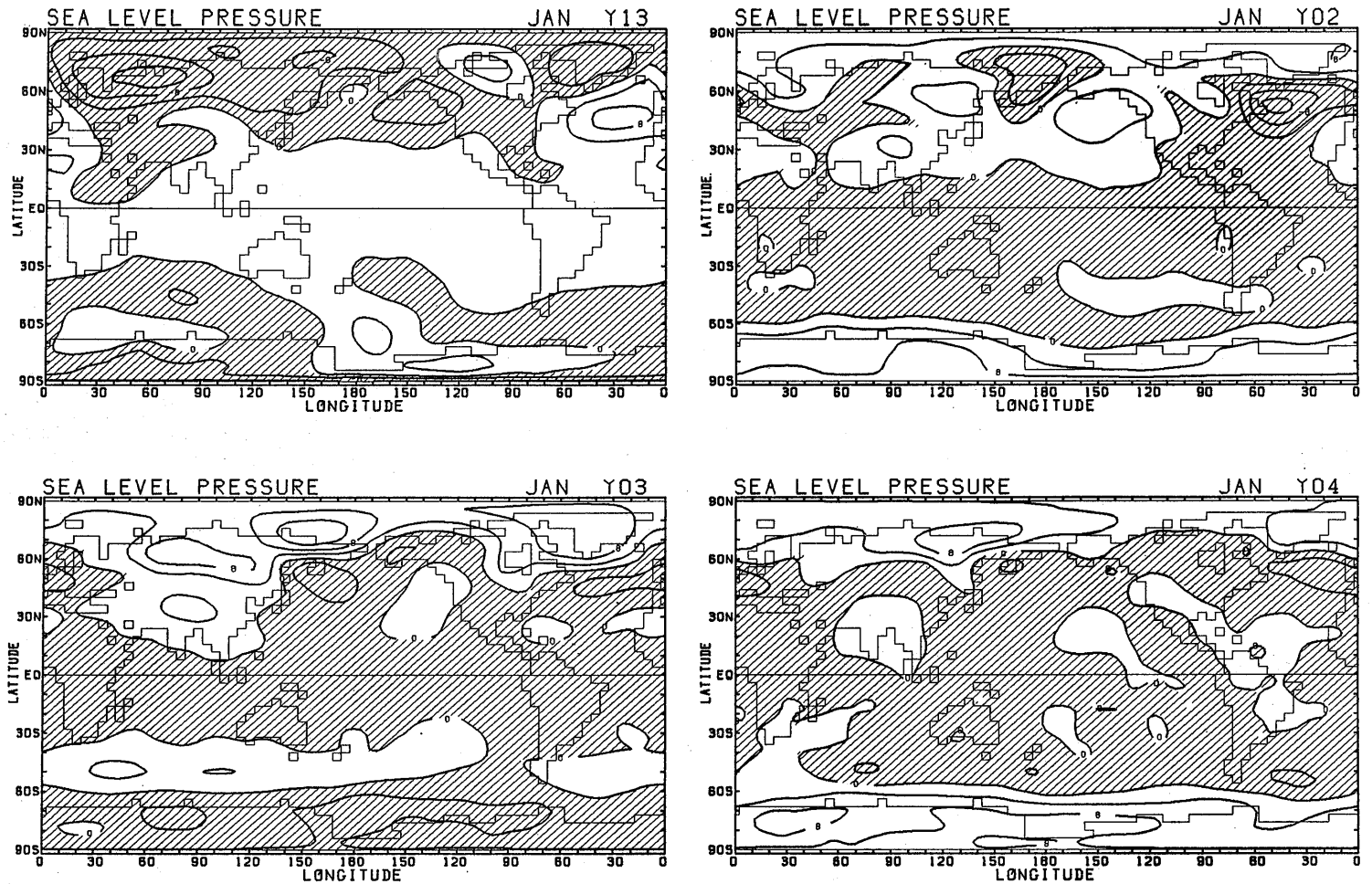

Fig. 2.1.2 Deviation of the monthly mean sea level pressure in January of Y13, Y02, Y03 and Y04 from the ensemble average shown in the upper left penel of Fig. 2.1.1. "Y13" indicates the 13th year of the model atmosphere. The contour interval is 4 mb. Negative area is shaded.

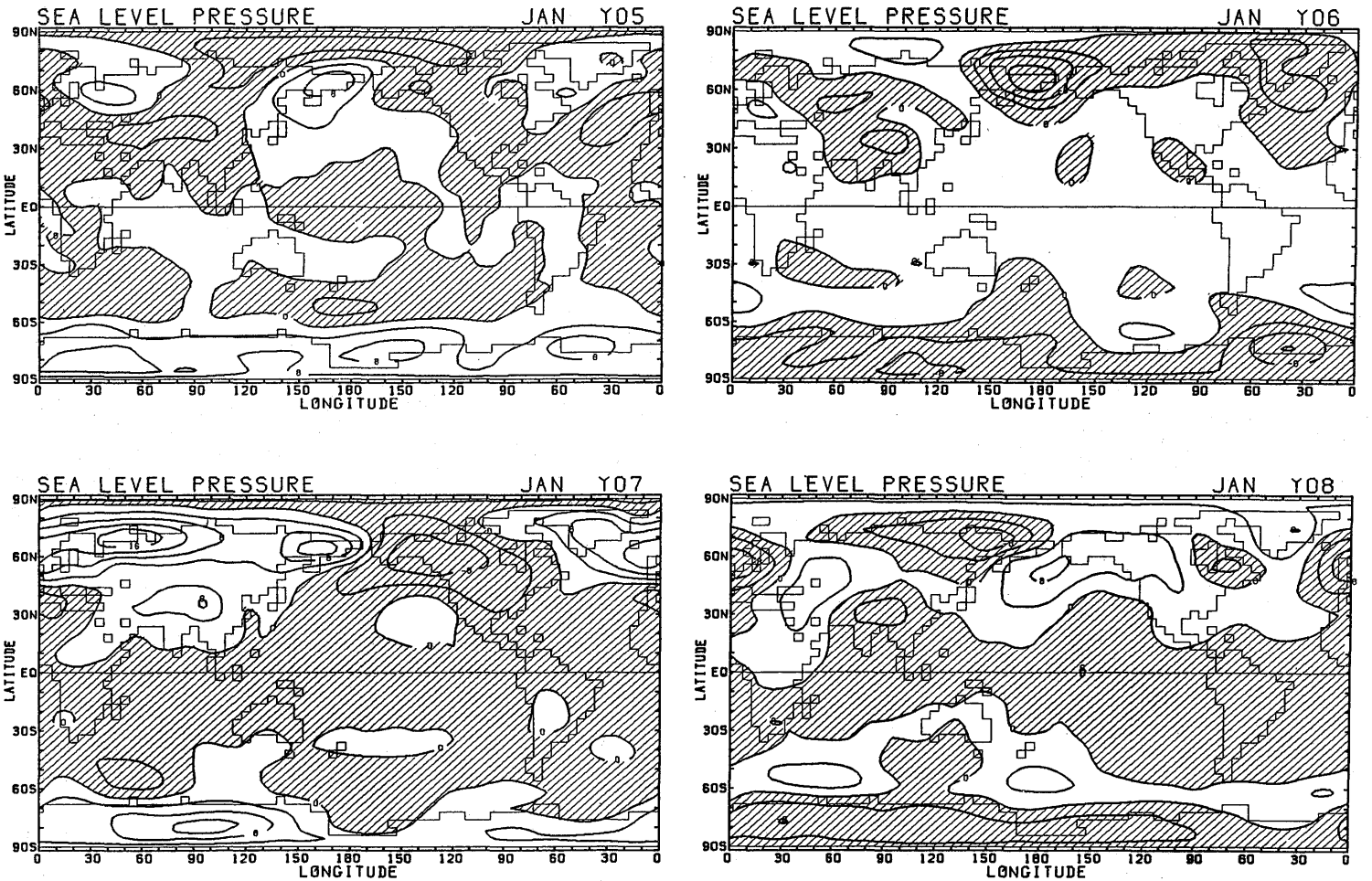

Fig. 2.1.3 Same as in Fig. 2.1.2 except for Y05, Y06, Y07 and Y08.

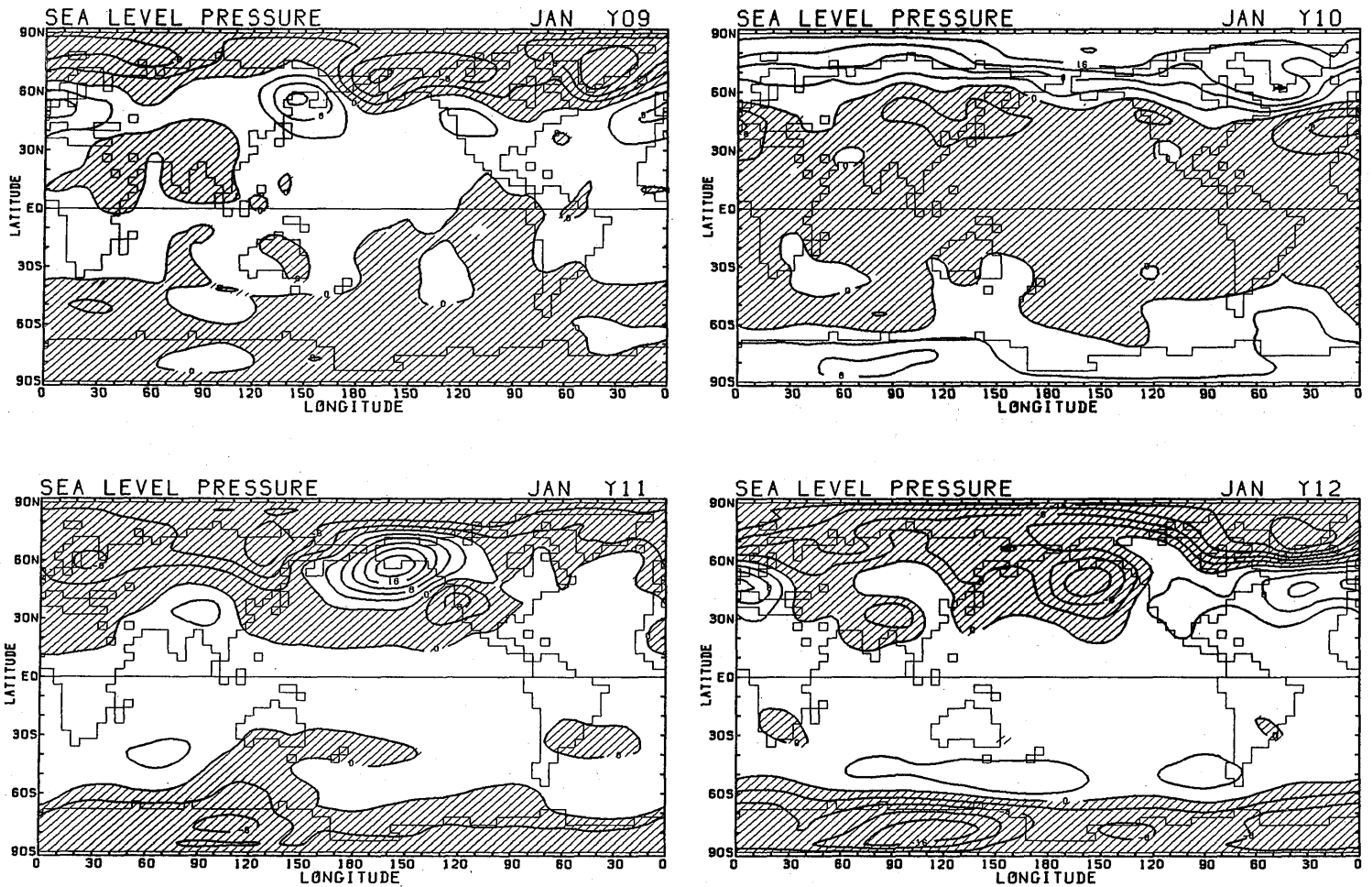

Fig. 2.1.4 Same as in Fig. 2.1.2 except for Y09, Y10, Y11 and Y12.

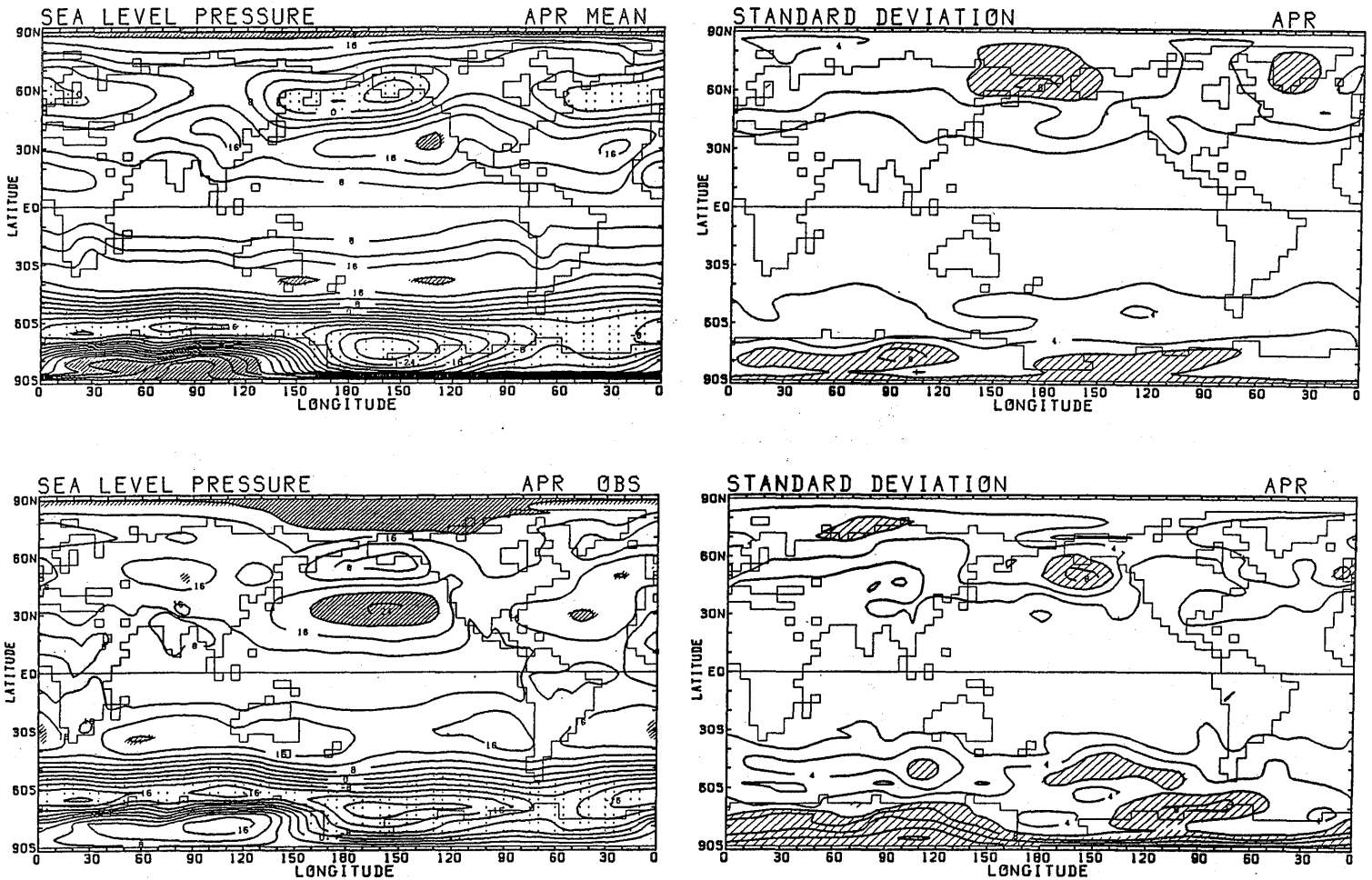

Fig. 2.2.1 Same as in Fig. 2.1.1 except for April.

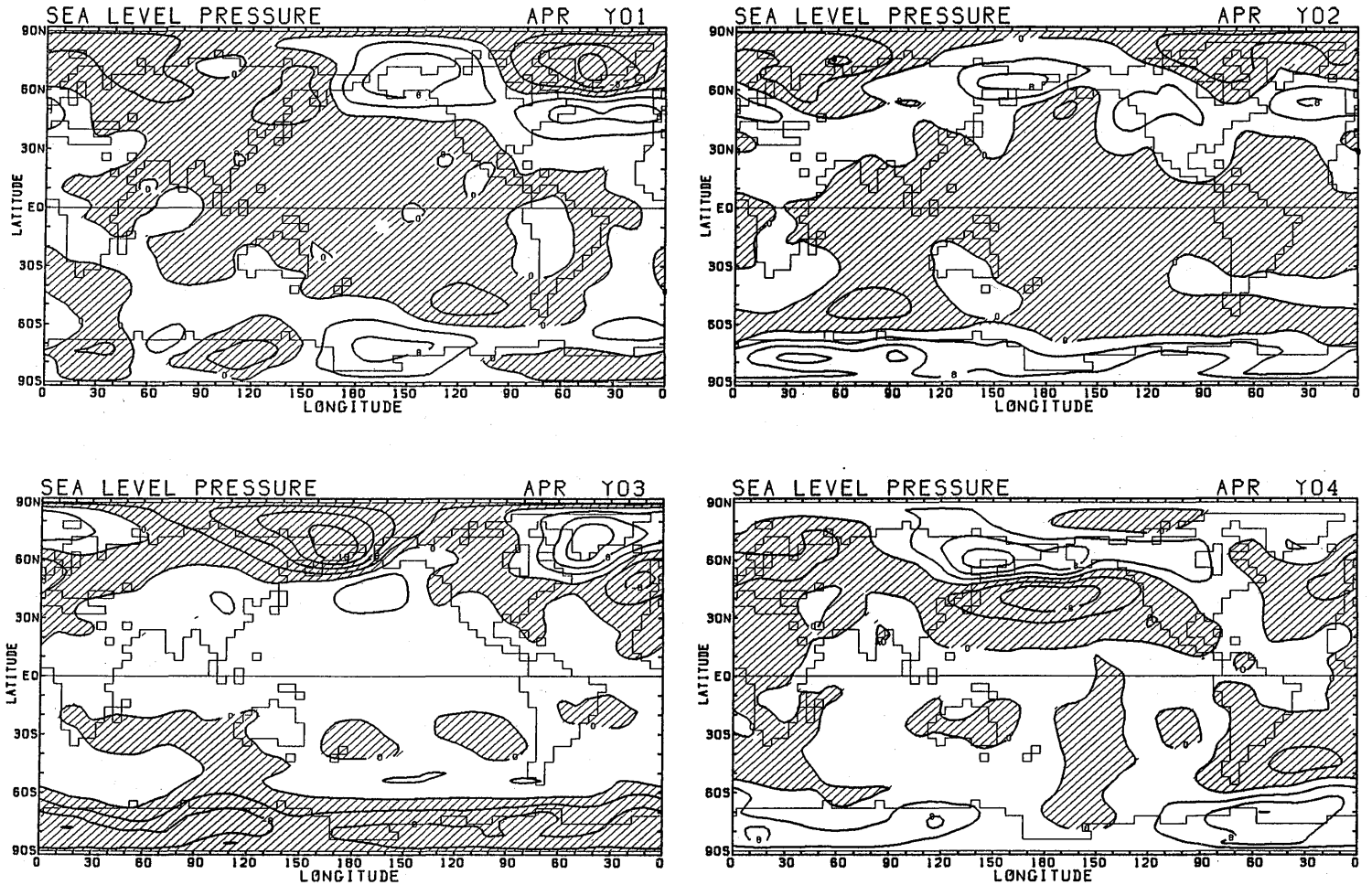

Fig. 2.2.2 Same as in Fig. 2.1.2 except for April of Y01, Y02, Y03 and Y04.

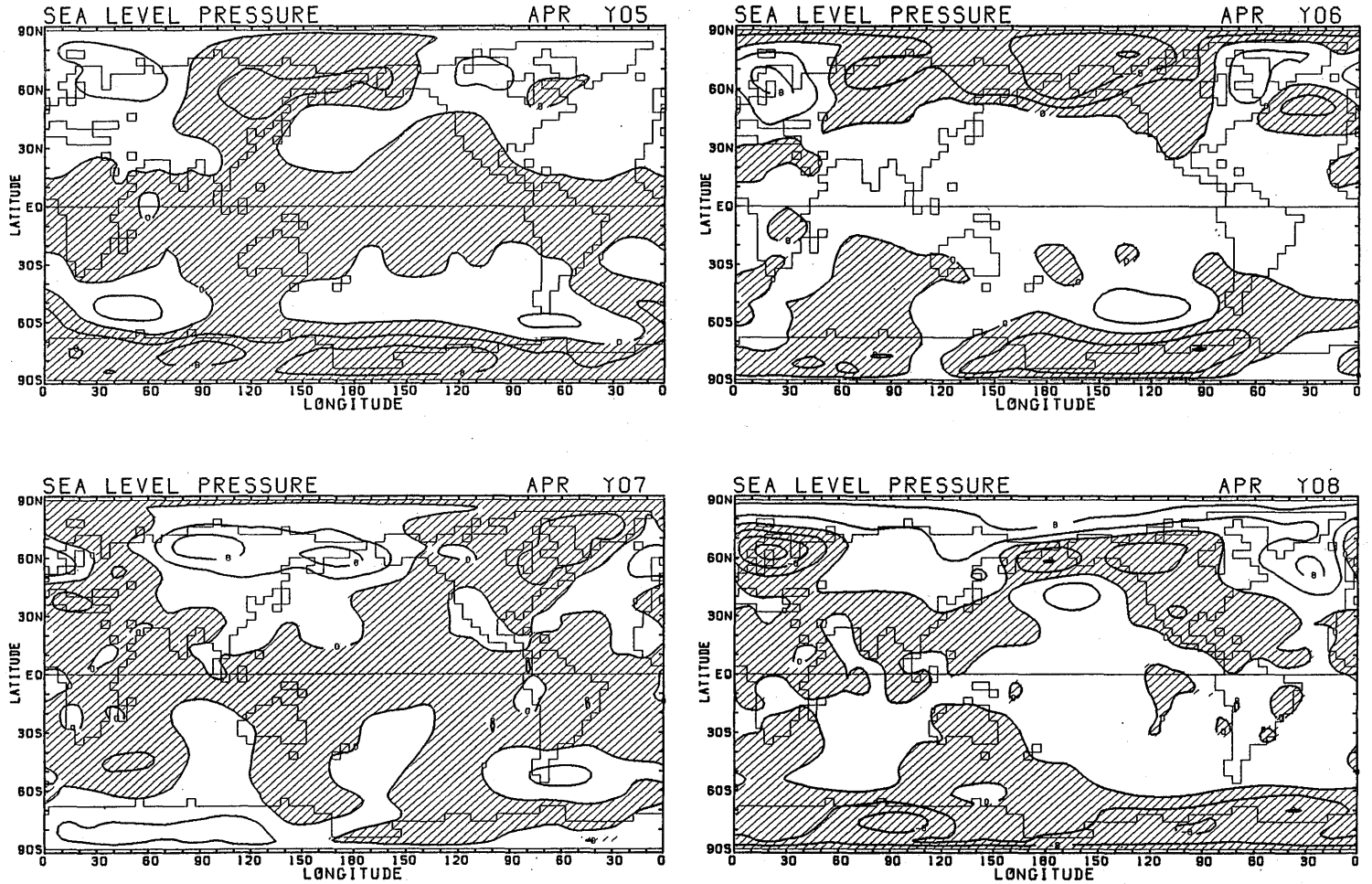

Fig. 2.2.3 Same as in Fig. 2.1.2 except for April of Y05, Y06, Y07 and Y08.

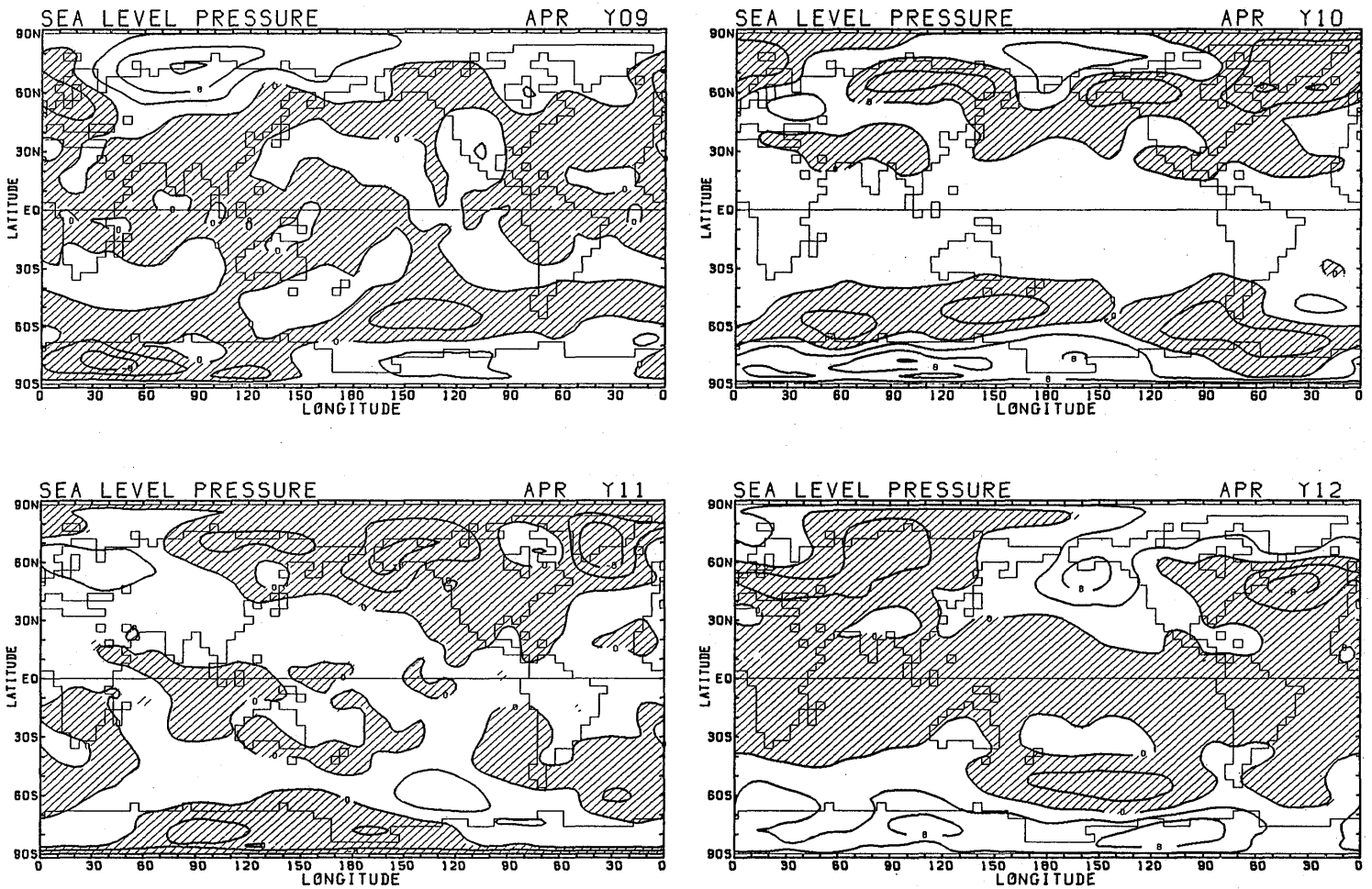

Fig. 2.2.4 Same as in Fig. 2.1.2 except for April of Y09, Y10, Y11 and Y12.

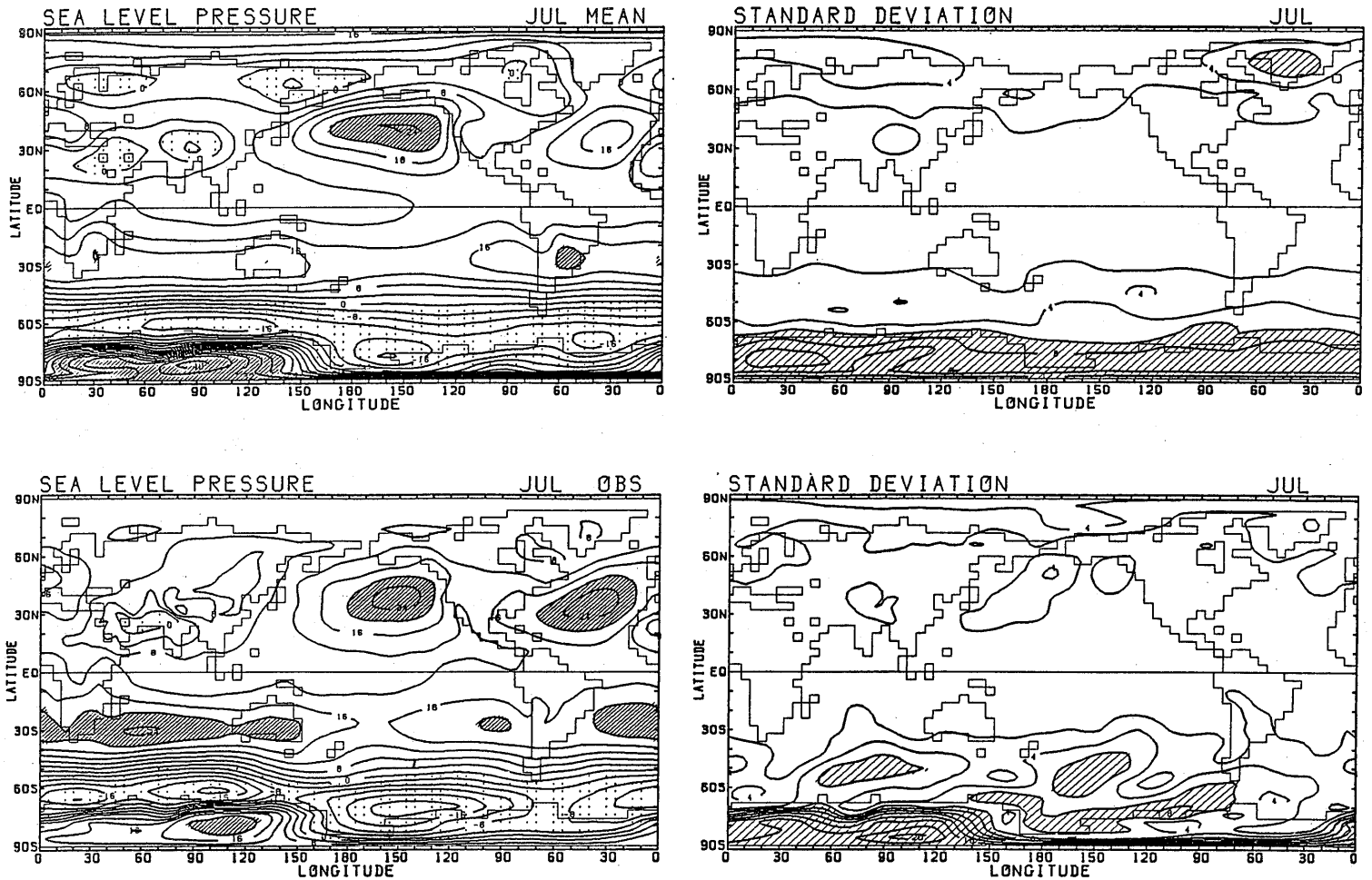

Fig. 2.3.1 Same as in Fig. 2.1.1 except for July.

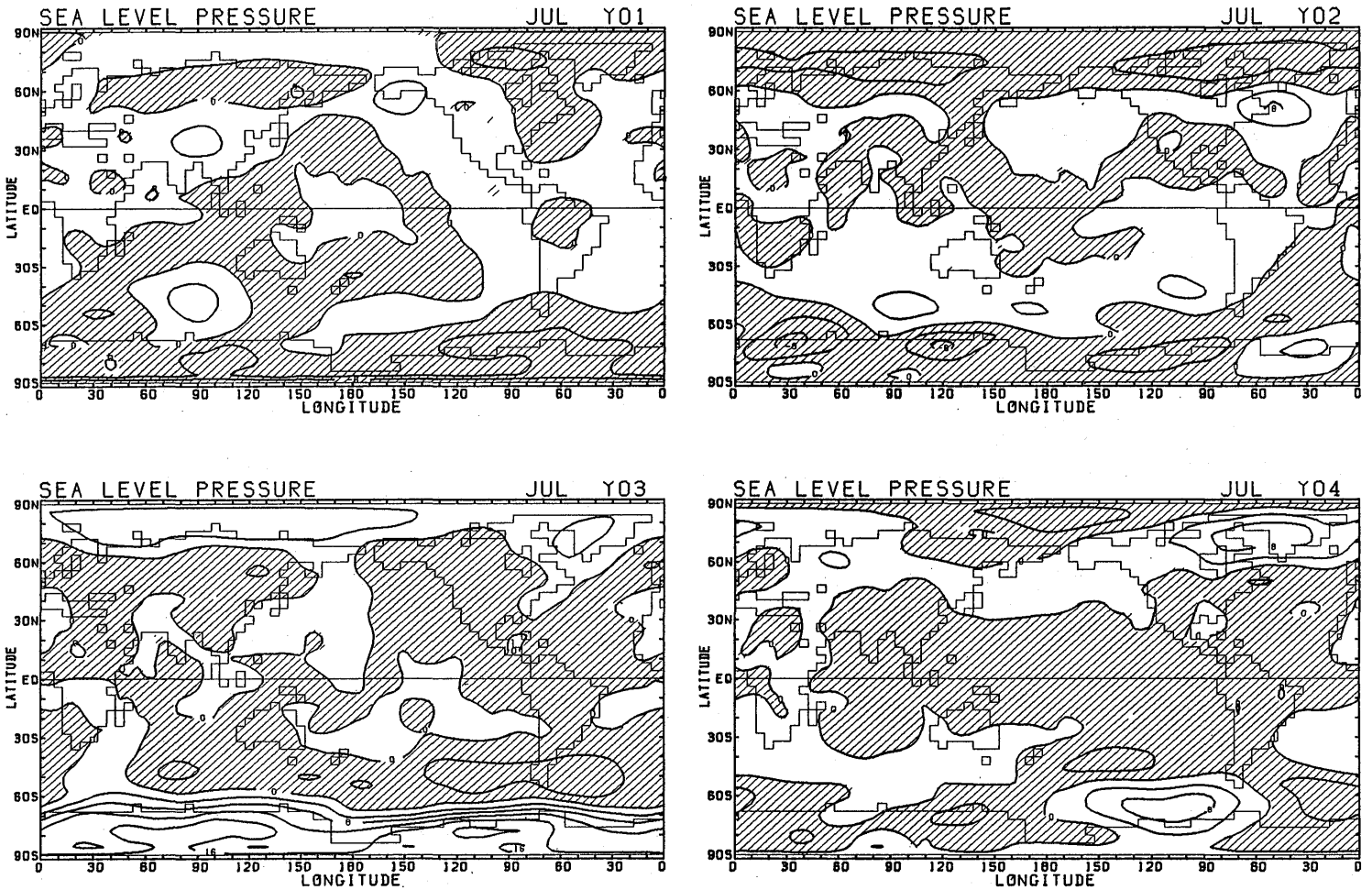

Fig. 2.3.2 Same as in Fig. 2.1.2 except for July of Y01, Y02, Y03 and Y04.

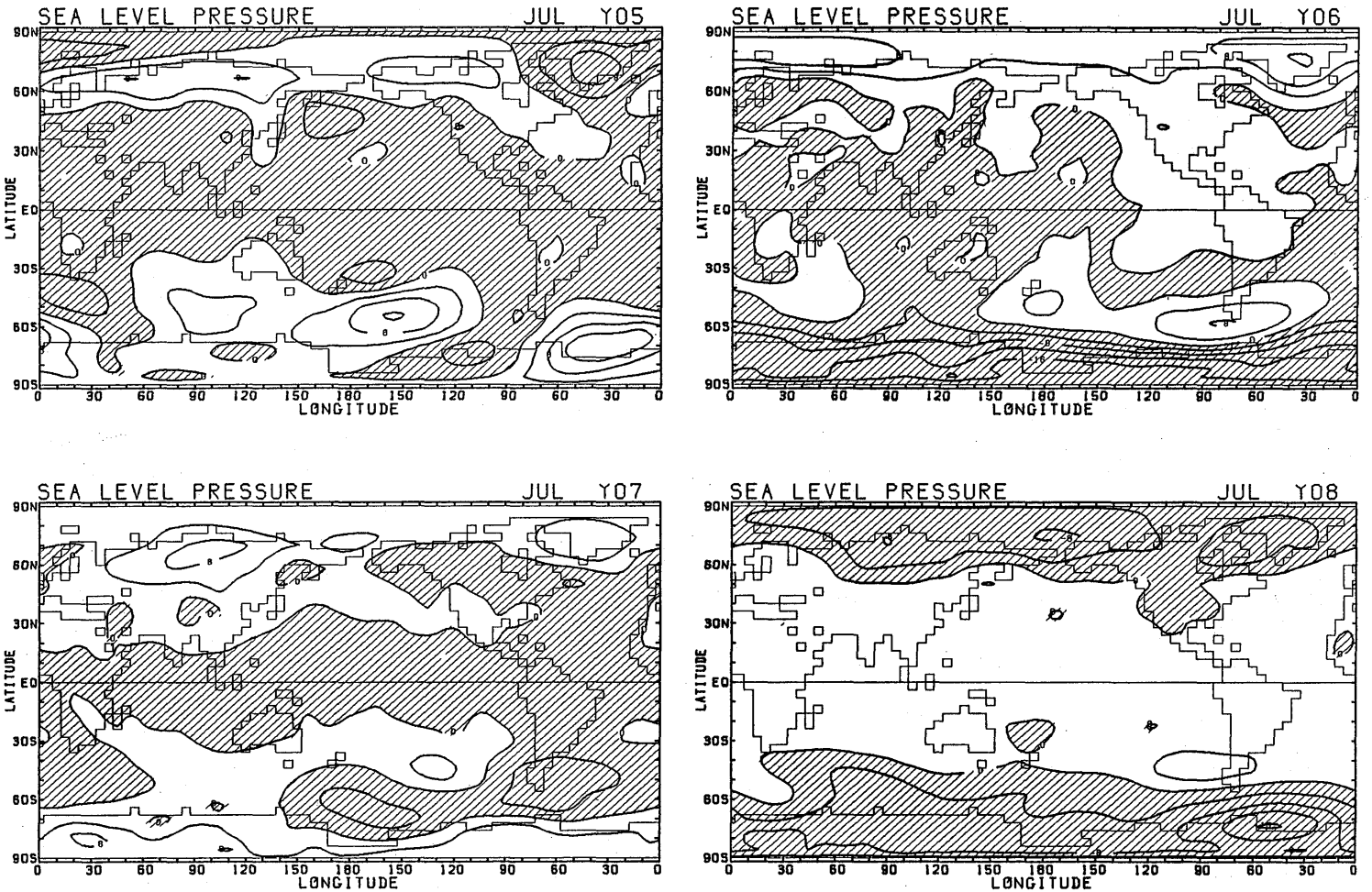

Fig. 2.3.3 Same as in Fig. 2.1.2 except for July of Y05, Y06, Y07 and Y08.

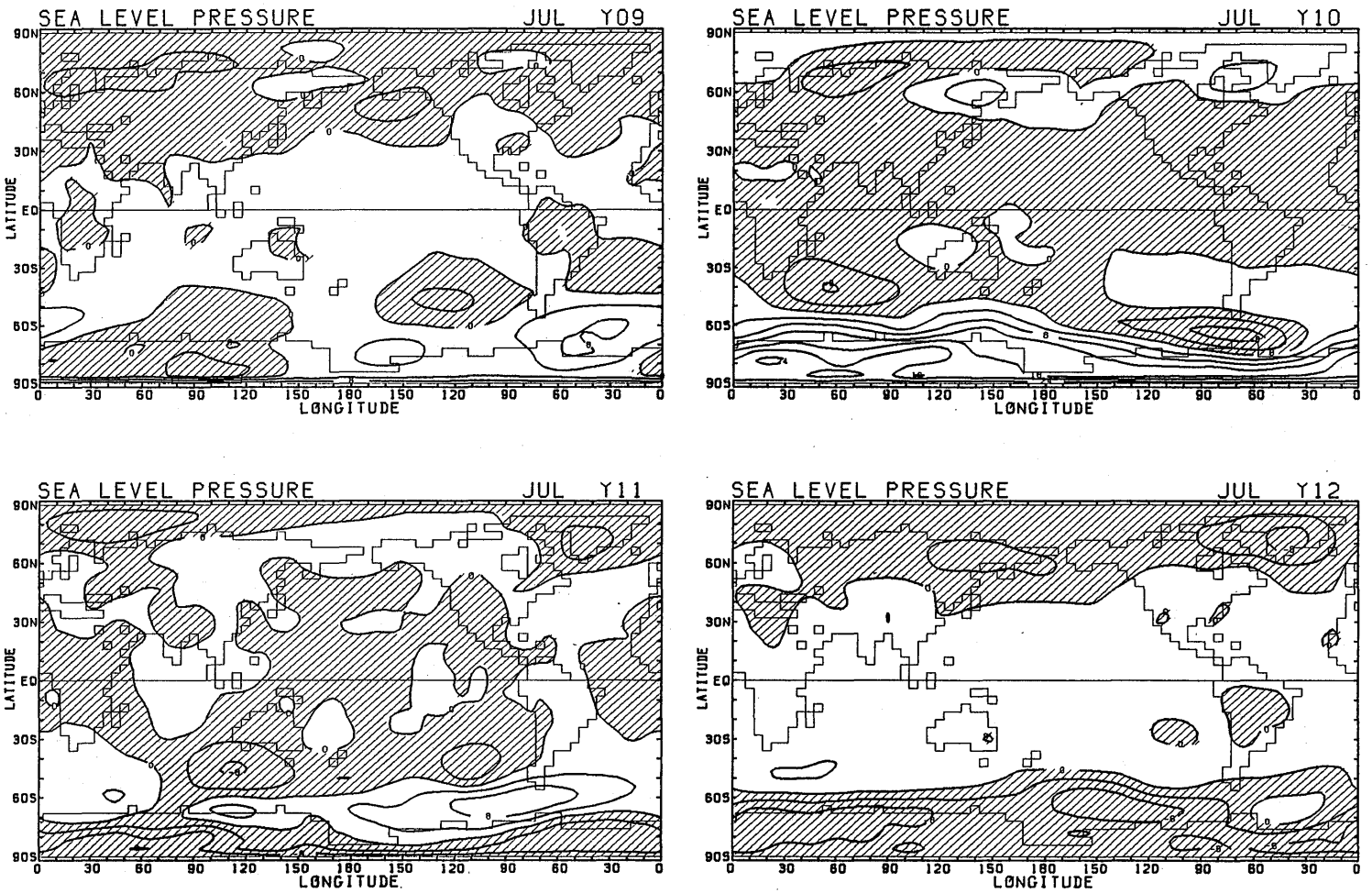

Fig. 2.3.4 Same as in Fig. 2.1.2 except for July of Y09, Y10, Y11 and Y12.

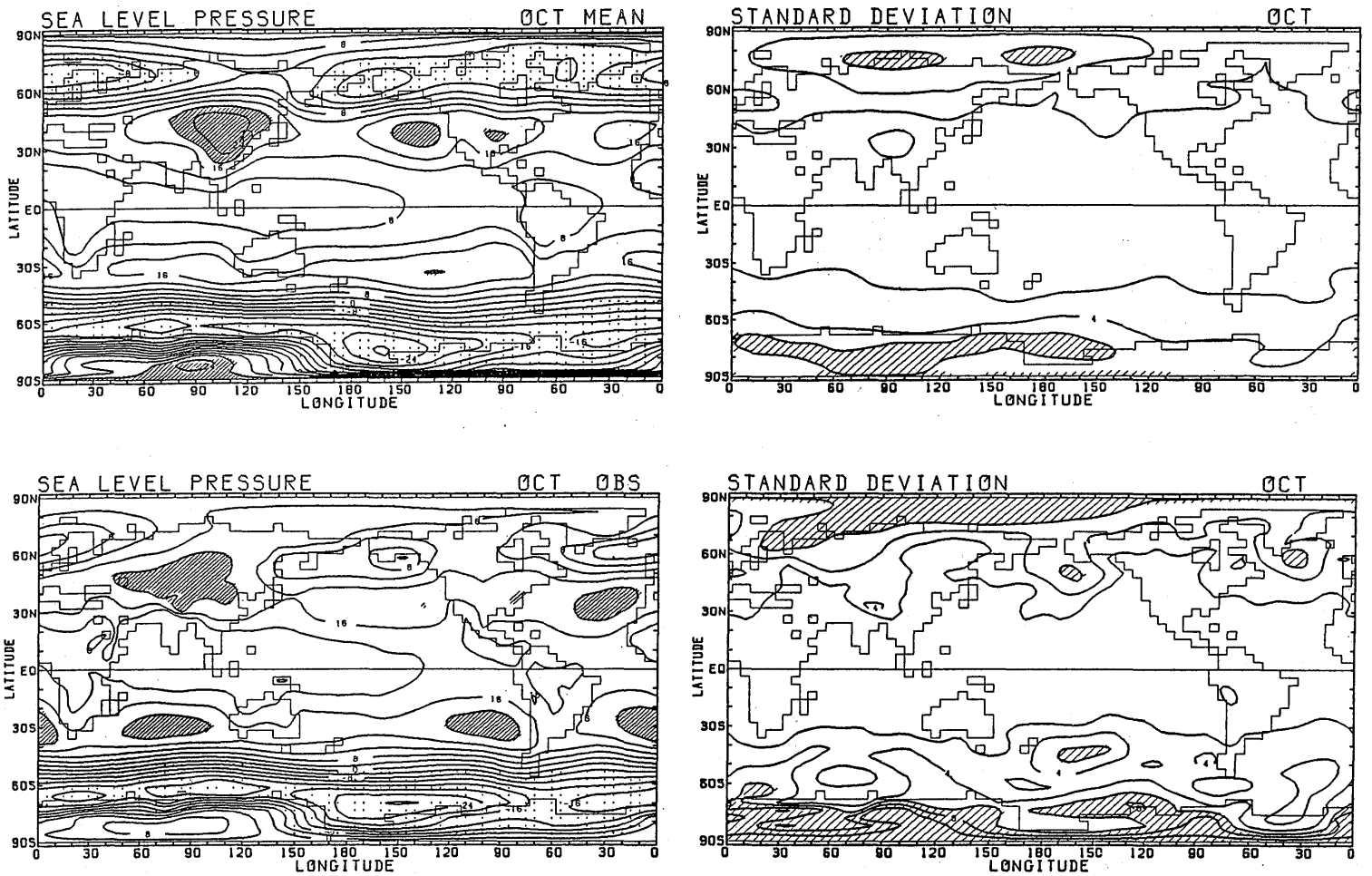

Fig. 2.4.1 Same as in Fig. 2.1.1 except for October.

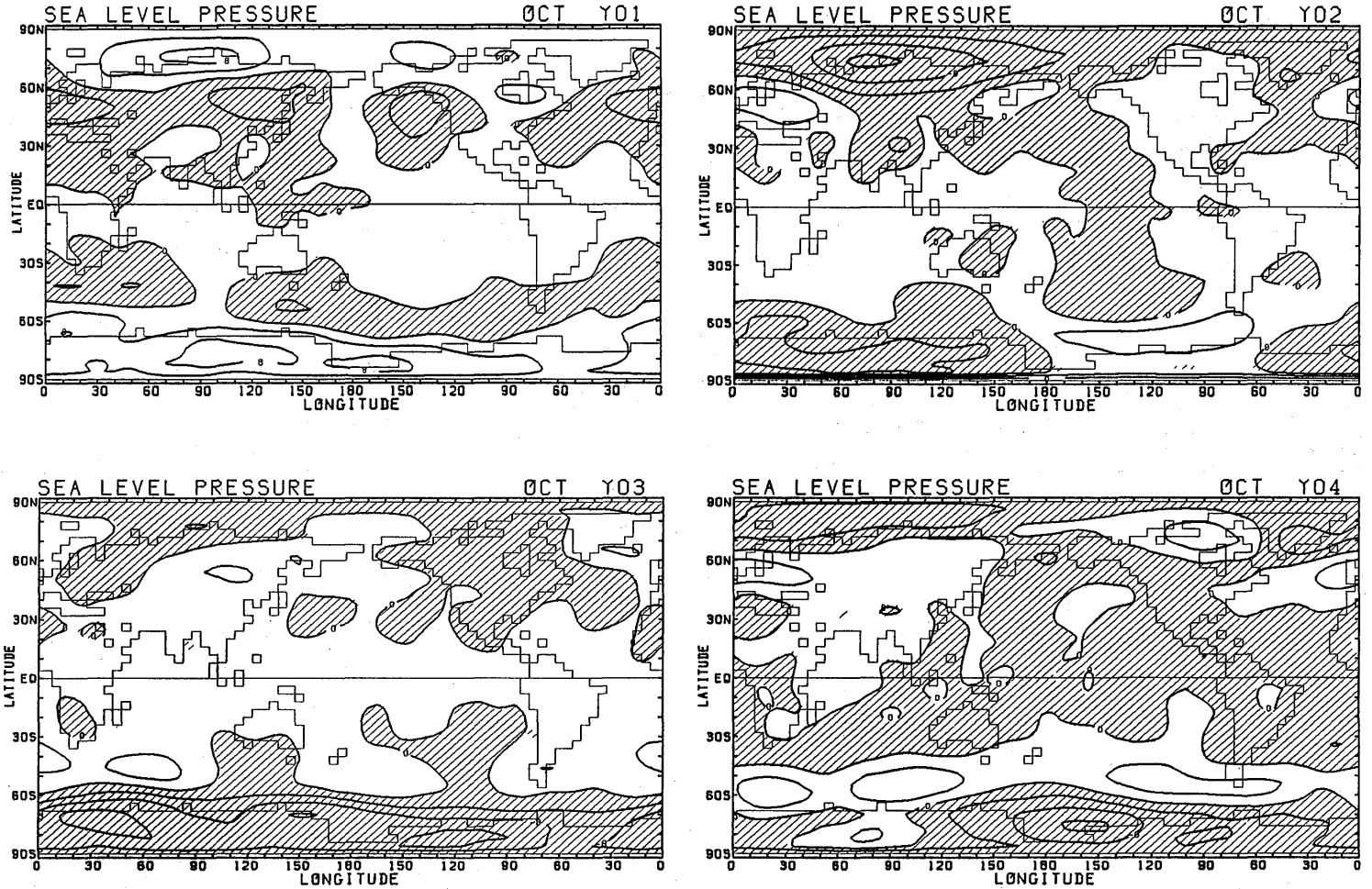

Fig. 2.4.2 Same as in Fig. 2.1.2 except for October of Y01, Y02, Y03 and Y04.

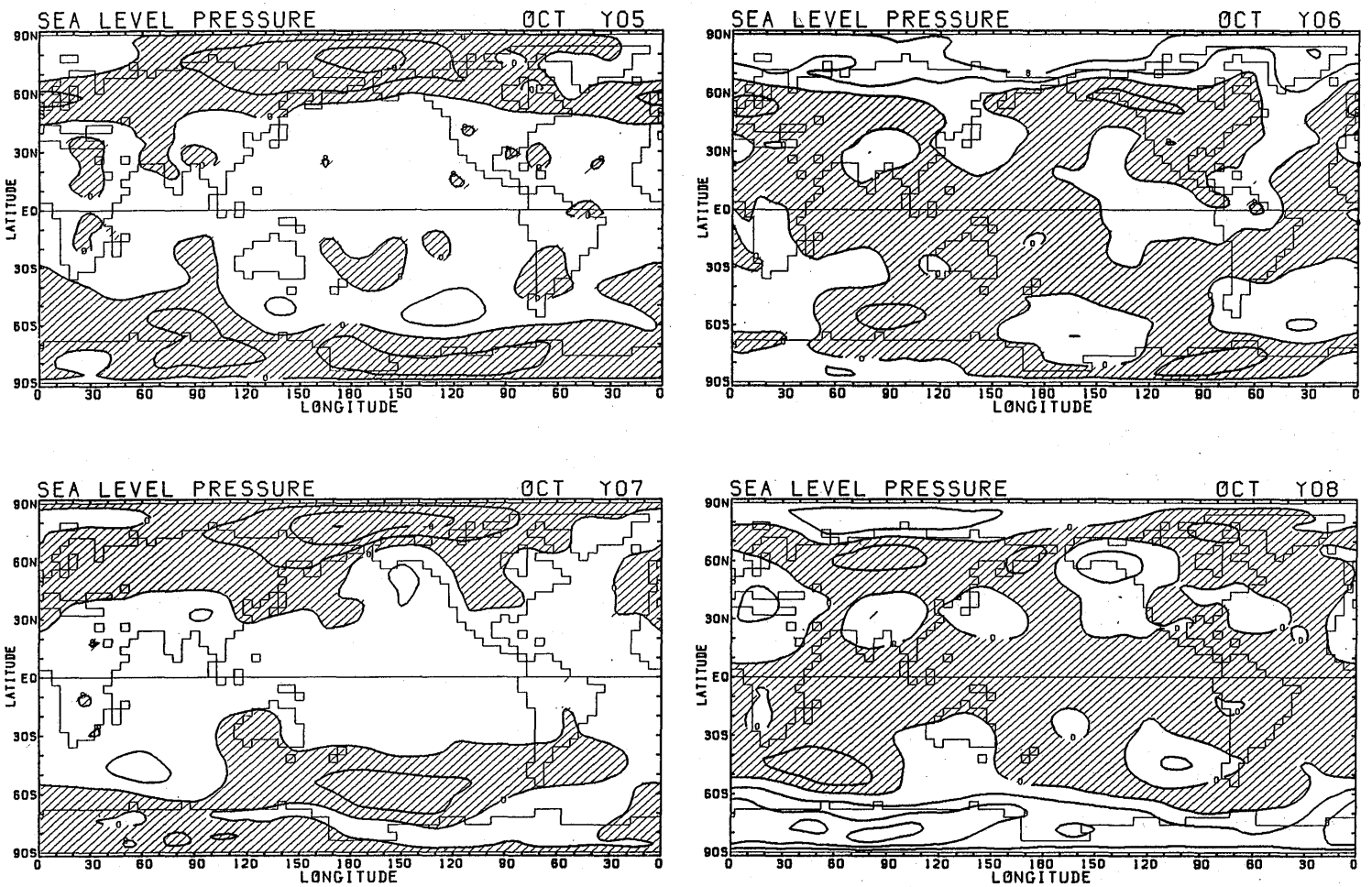

Fig. 2.4.3 Same as in Fig. 2.1.2 except for October of Y05, Y06, Y07 and Y08.

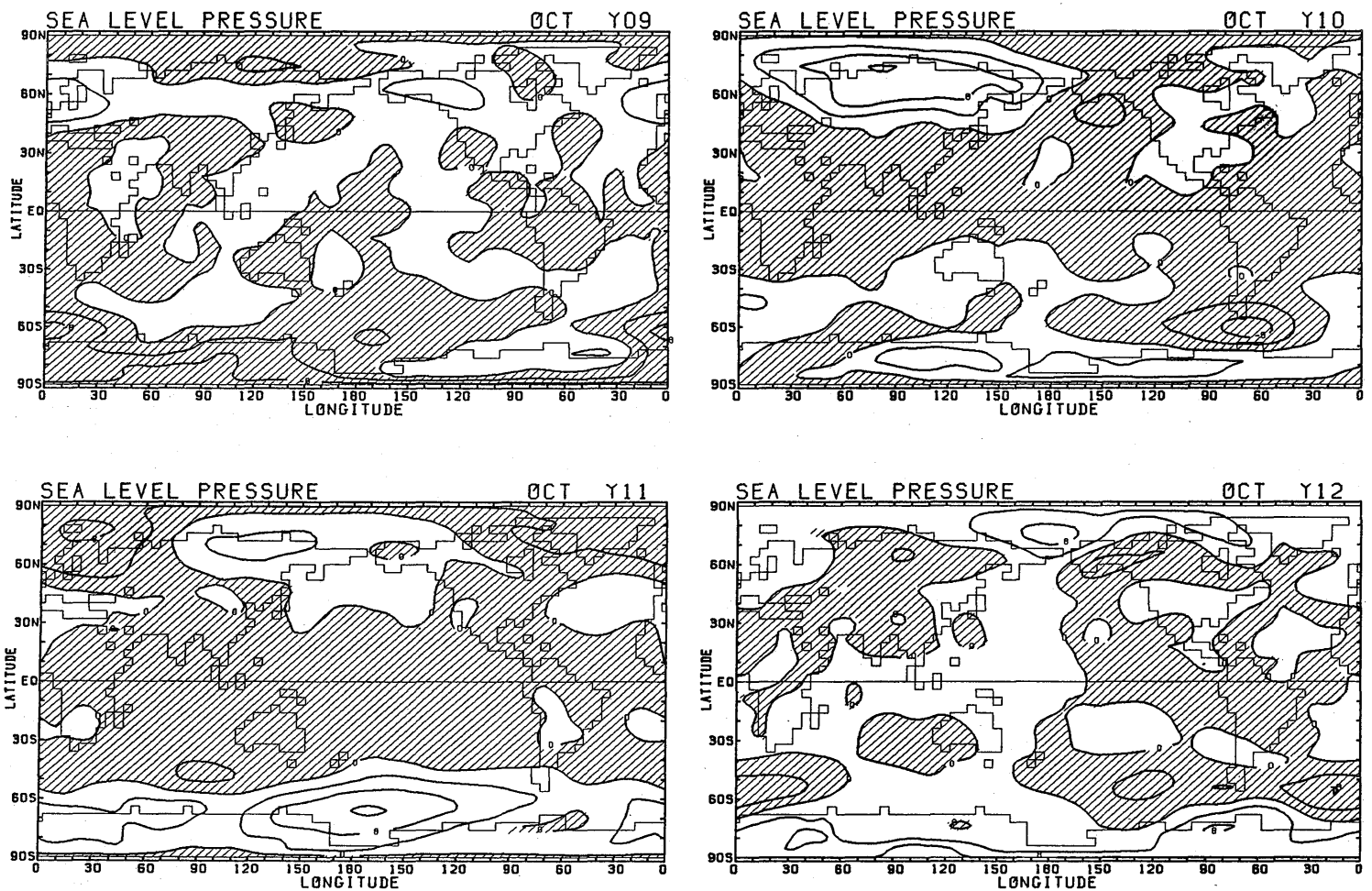

Fig. 2.4.4 Same as in Fig. 2.1.2 except for October of Y09, Y10, Y11 and Y12.

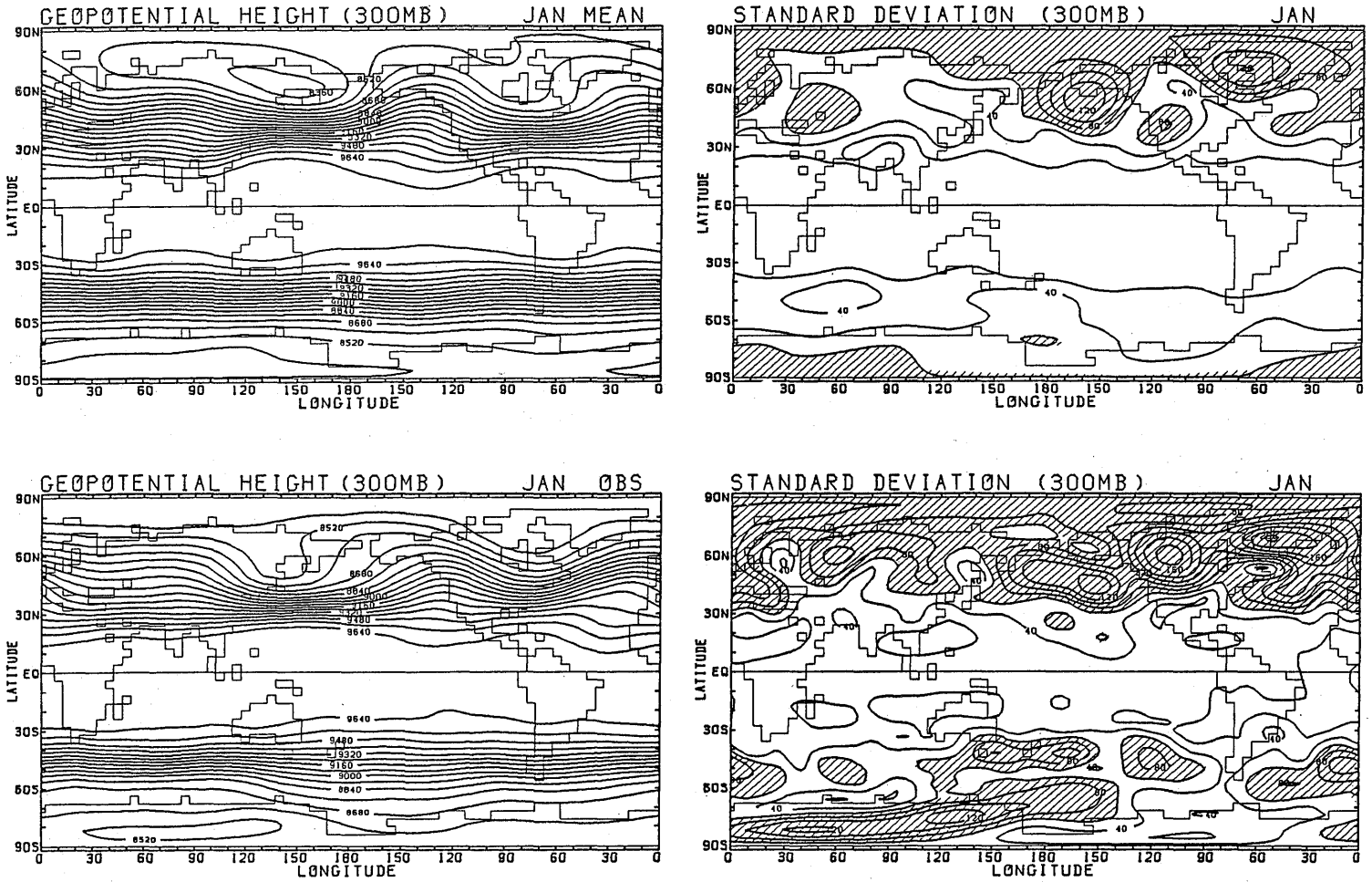

Fig. 2.5.1 Ensemble average of the monthly mean geopotential height at 300 mb (upper left panel) and the standard deviation from the ensemble average (upper right panel) for model January. The lower panels are corresponding climate values obtained from the analyzed data of the ECMWF. The contour interval of the lefthand panels is 80 g.p.m. The contour interval of the righthand panels is 20 g.p.m. and the area over 60 g.p.m. is shaded.

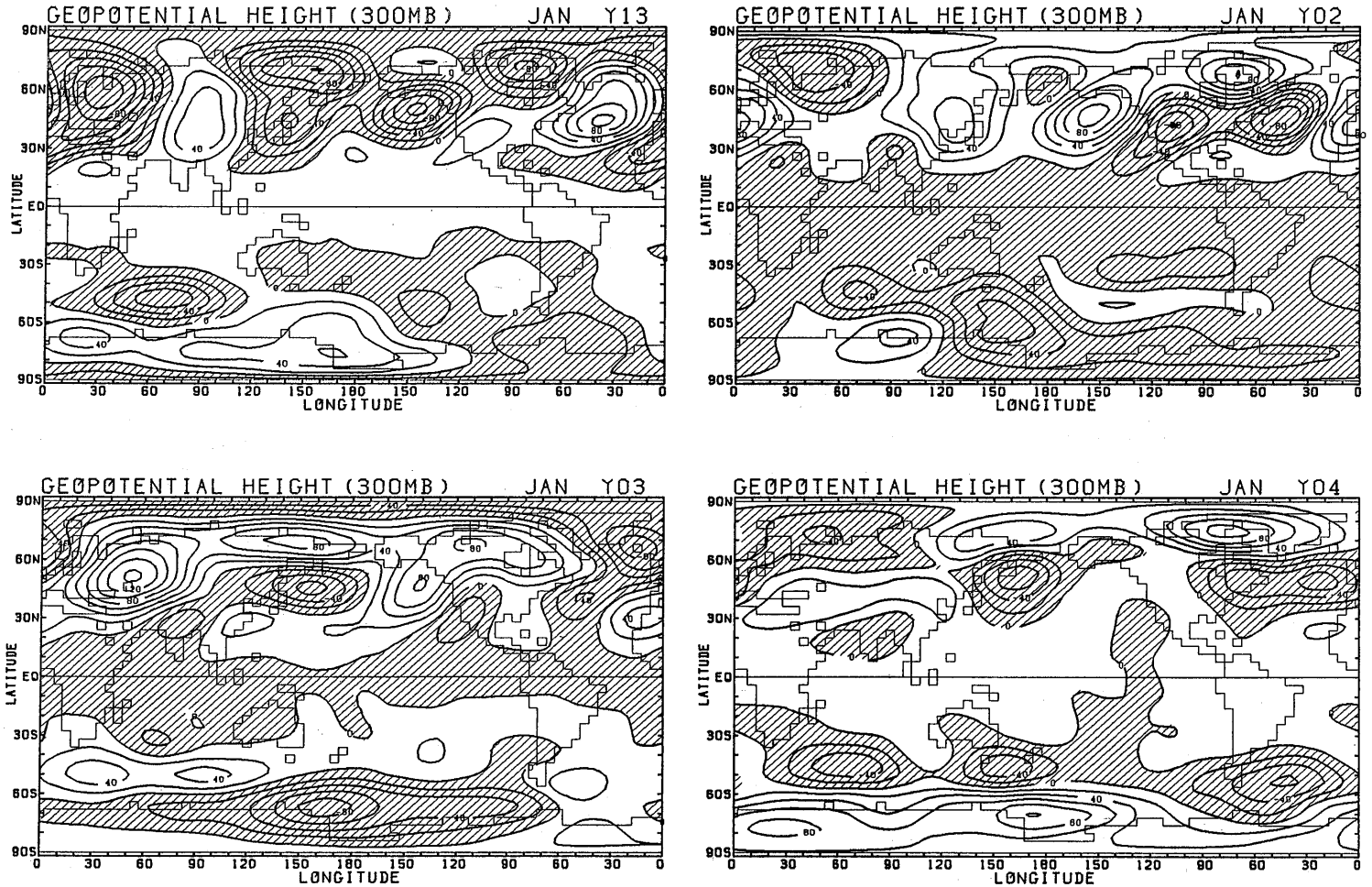

Fig. 2.5.2 Deviation of the monthly mean geopotential height at 300 mb in January of Y13, Y02, Y03 and Y04 from the ensemble average shown in the upper left panel of Fig. 2.5.1. The contour interval is 20 g.p.m. Negative area is shaded.

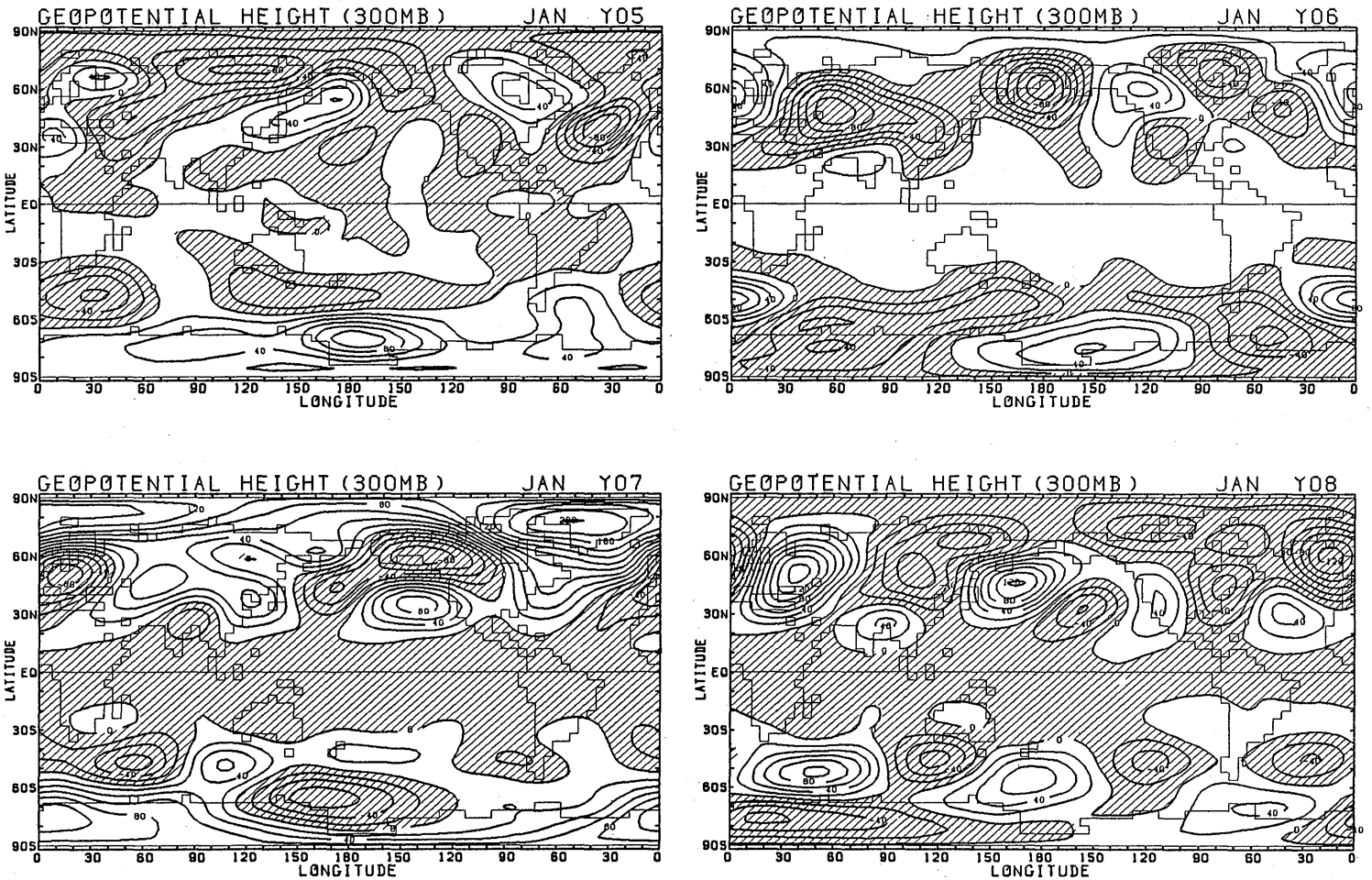

Fig. 2.5.3 Same as in Fig. 2.5.2 except for Y05, Y06, Y07 and Y08.

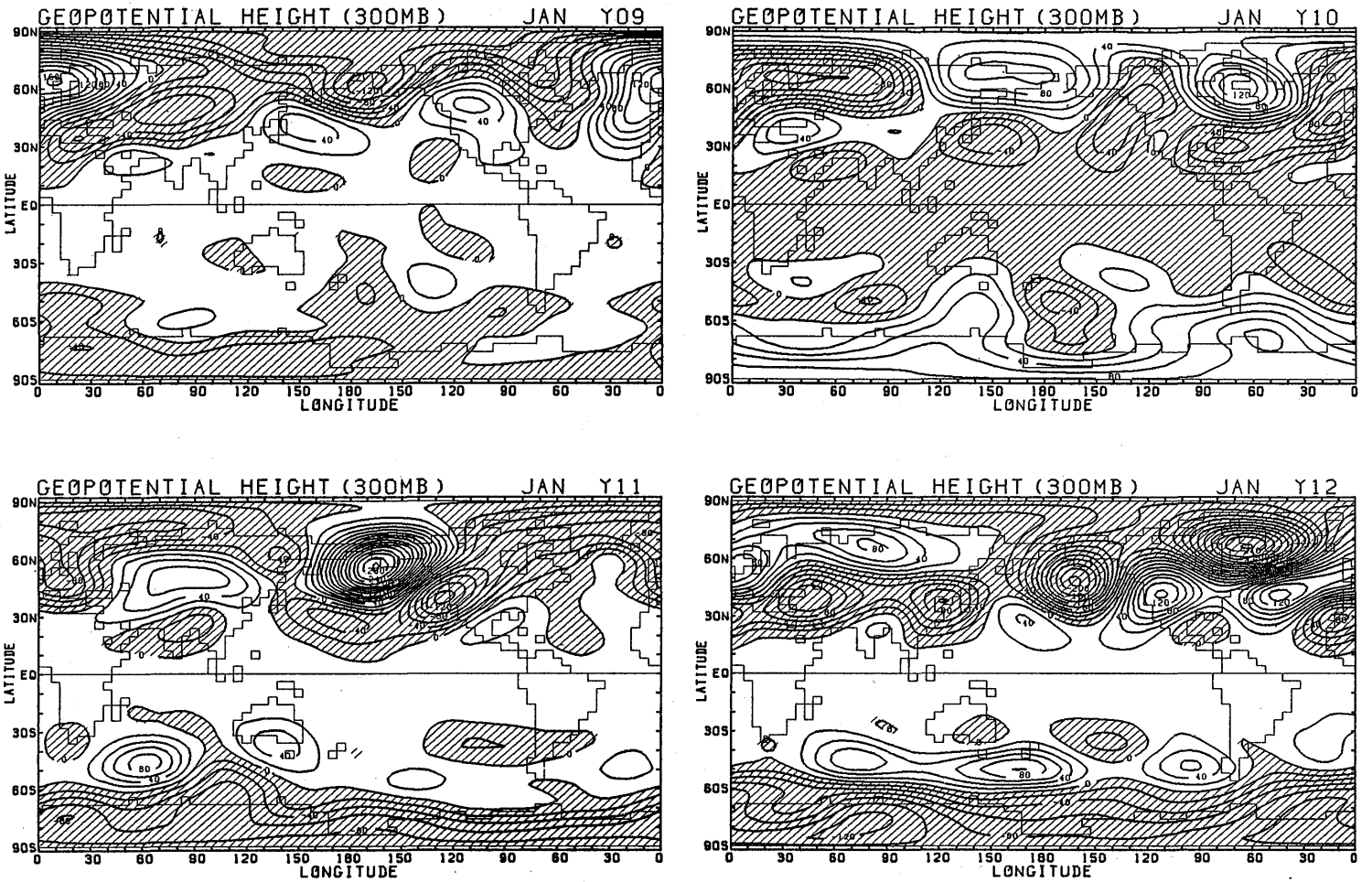

Fig. 2.5.4 Same as in Fig. 2.5.2 except for Y09, Y10, Y11 and Y12.

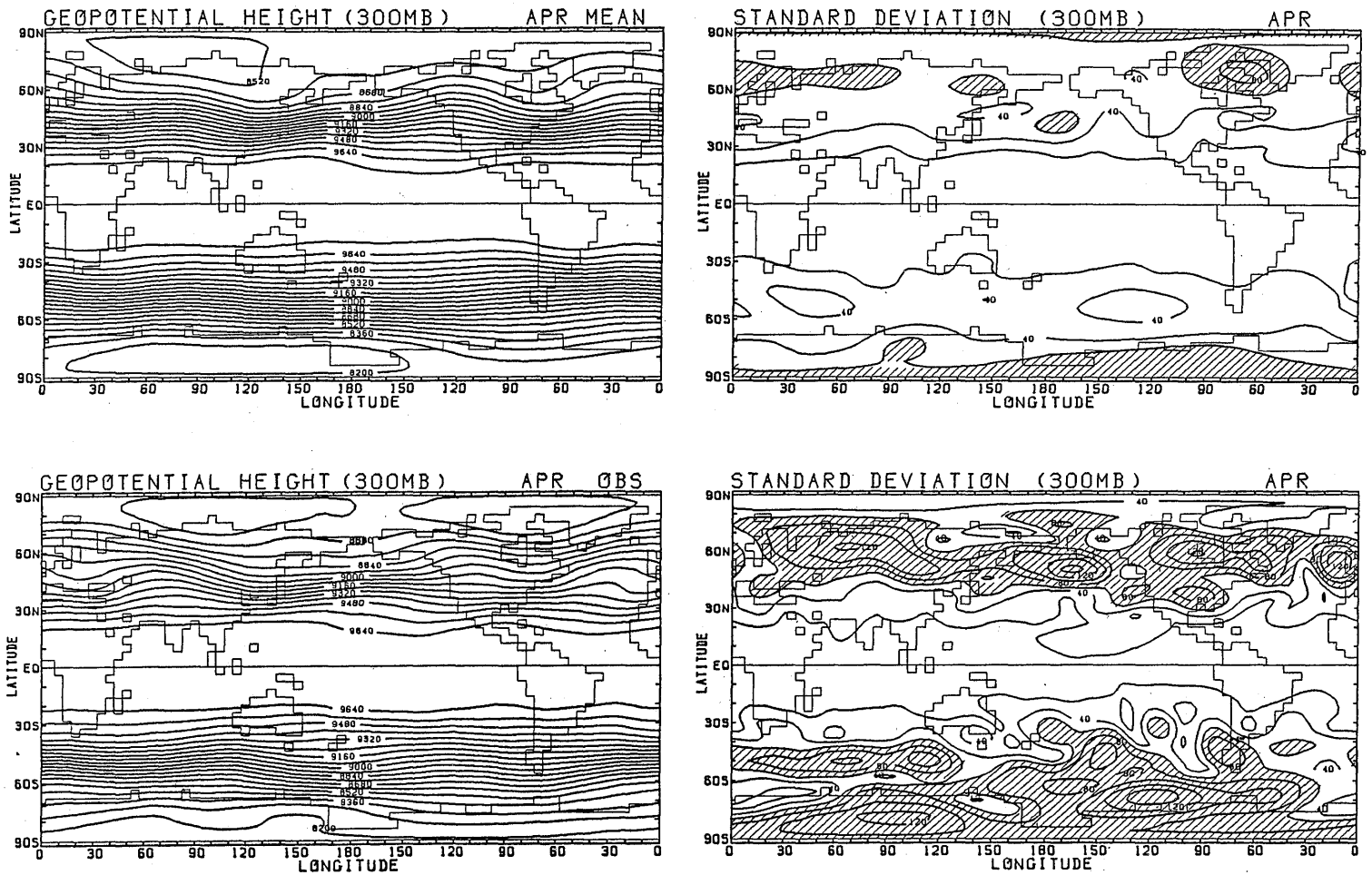

Fig. 2.6.1 Same as in Fig. 2.5.1 except for April.

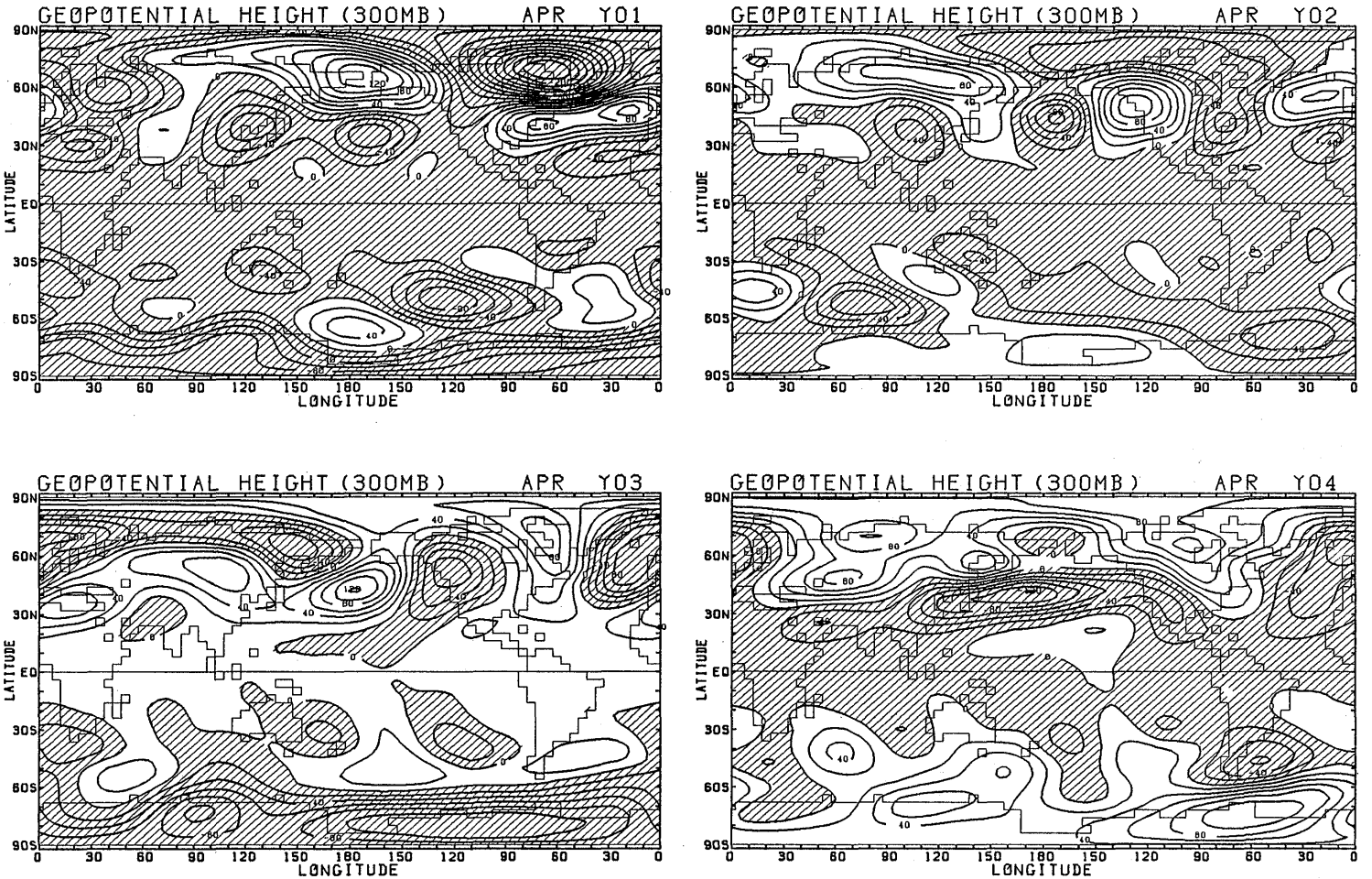

Fig. 2.6.2 Same as in Fig. 2.5.2 except for April of Y01, Y02, Y03 and Y04.

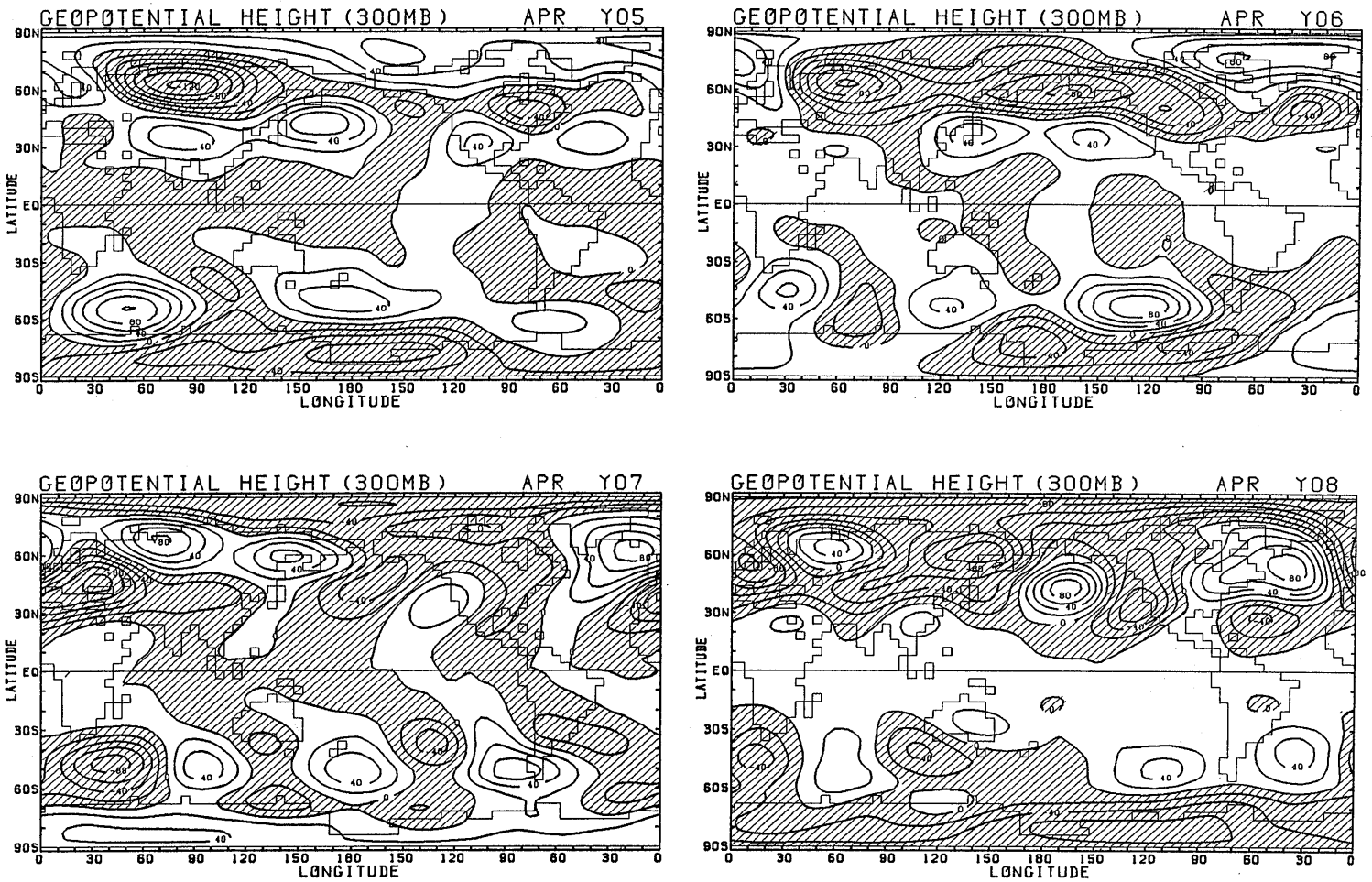

Fig. 2.6.3 Same as in Fig. 2.5.2 except for April of Y05, Y06, Y07 and Y08.

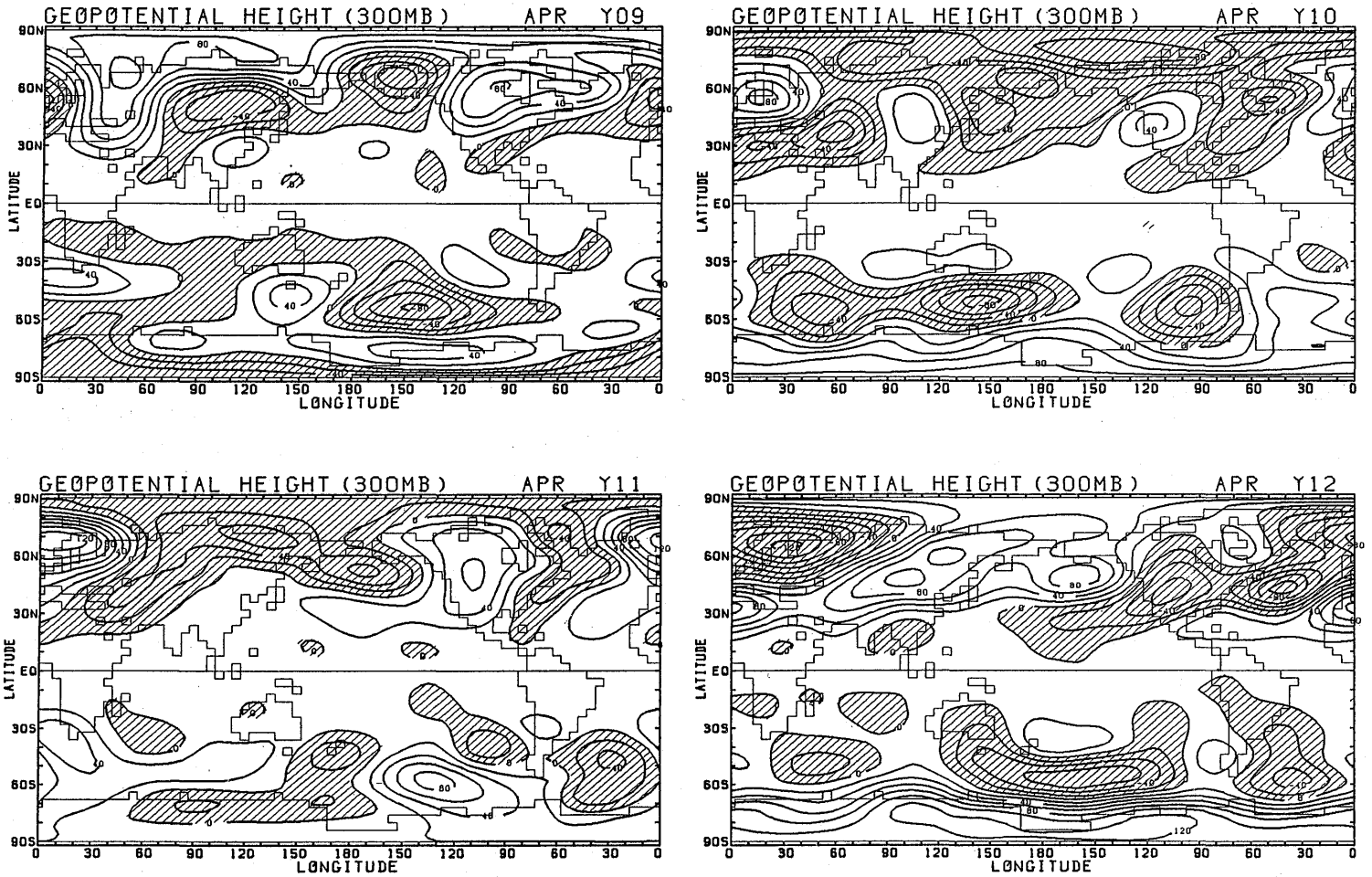

Fig. 2.6.4 Same as in Fig. 2.5.2 except for April of Y09, Y10, Y11 and Y12.

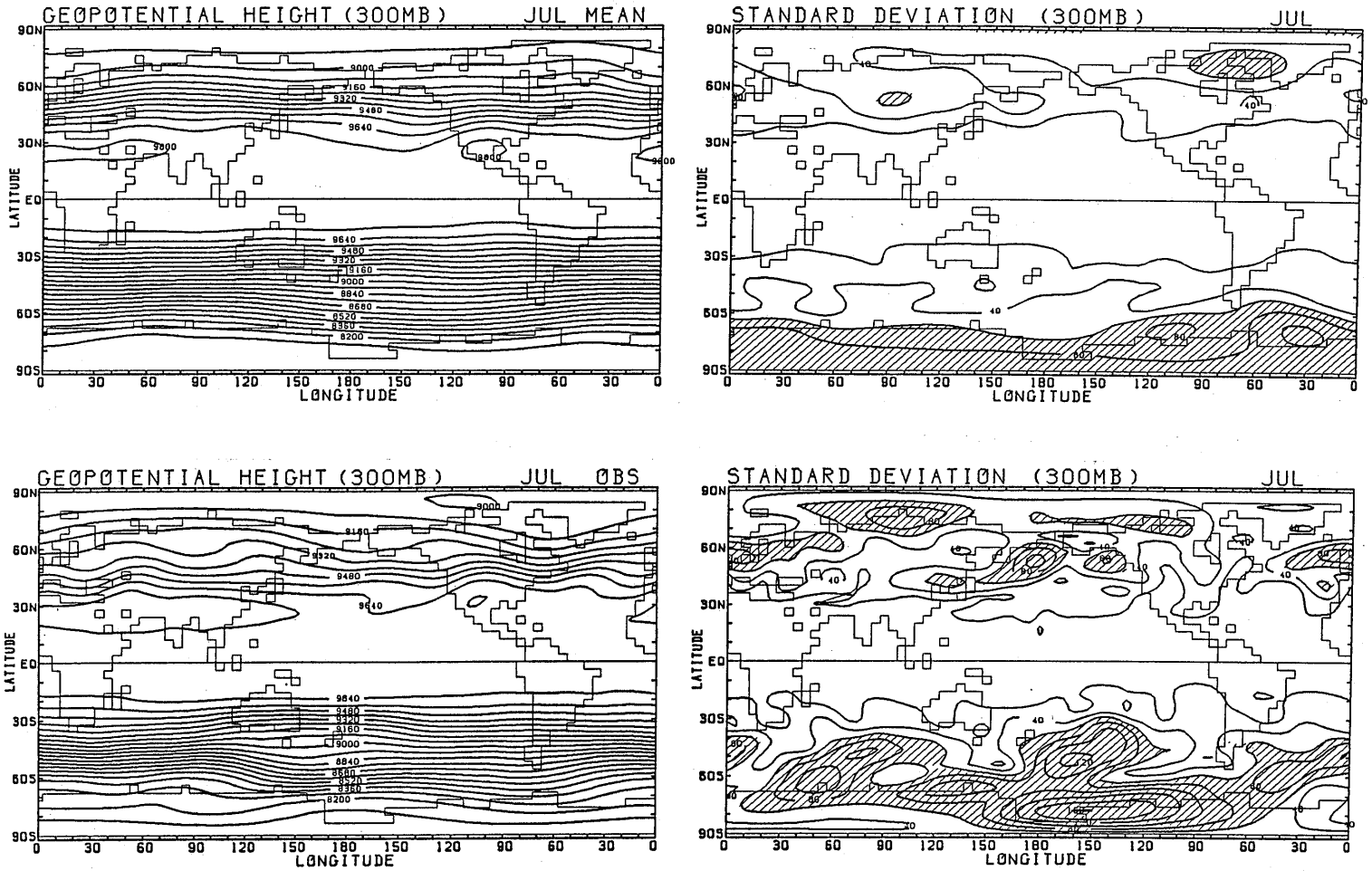

Fig. 2.7.1 Same as in Fig. 2.5.1 except for July.

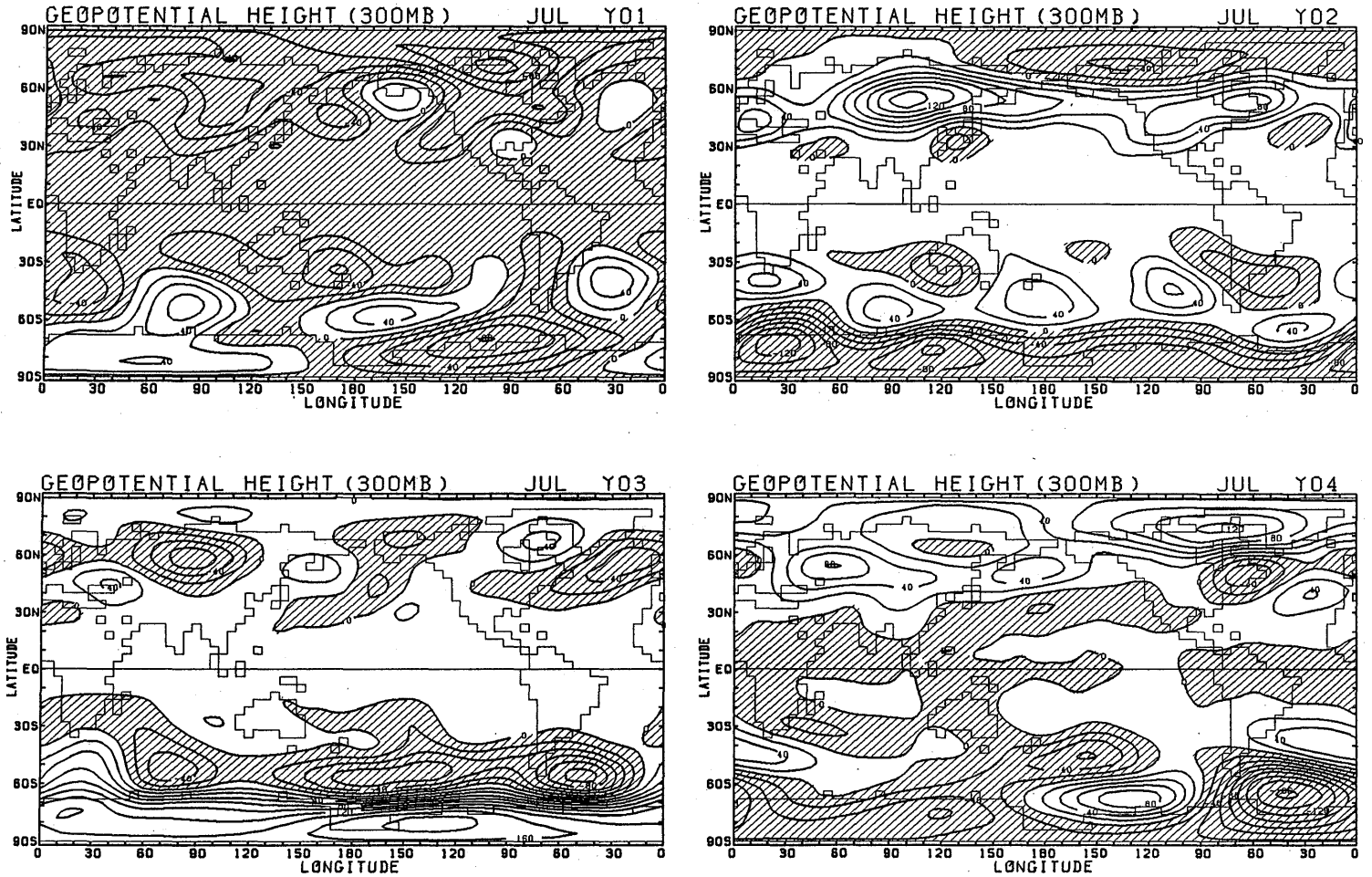

Fig. 2.7.2 Same as in Fig. 2.5.2 except for July of Y01, Y02, Y03 and Y04.

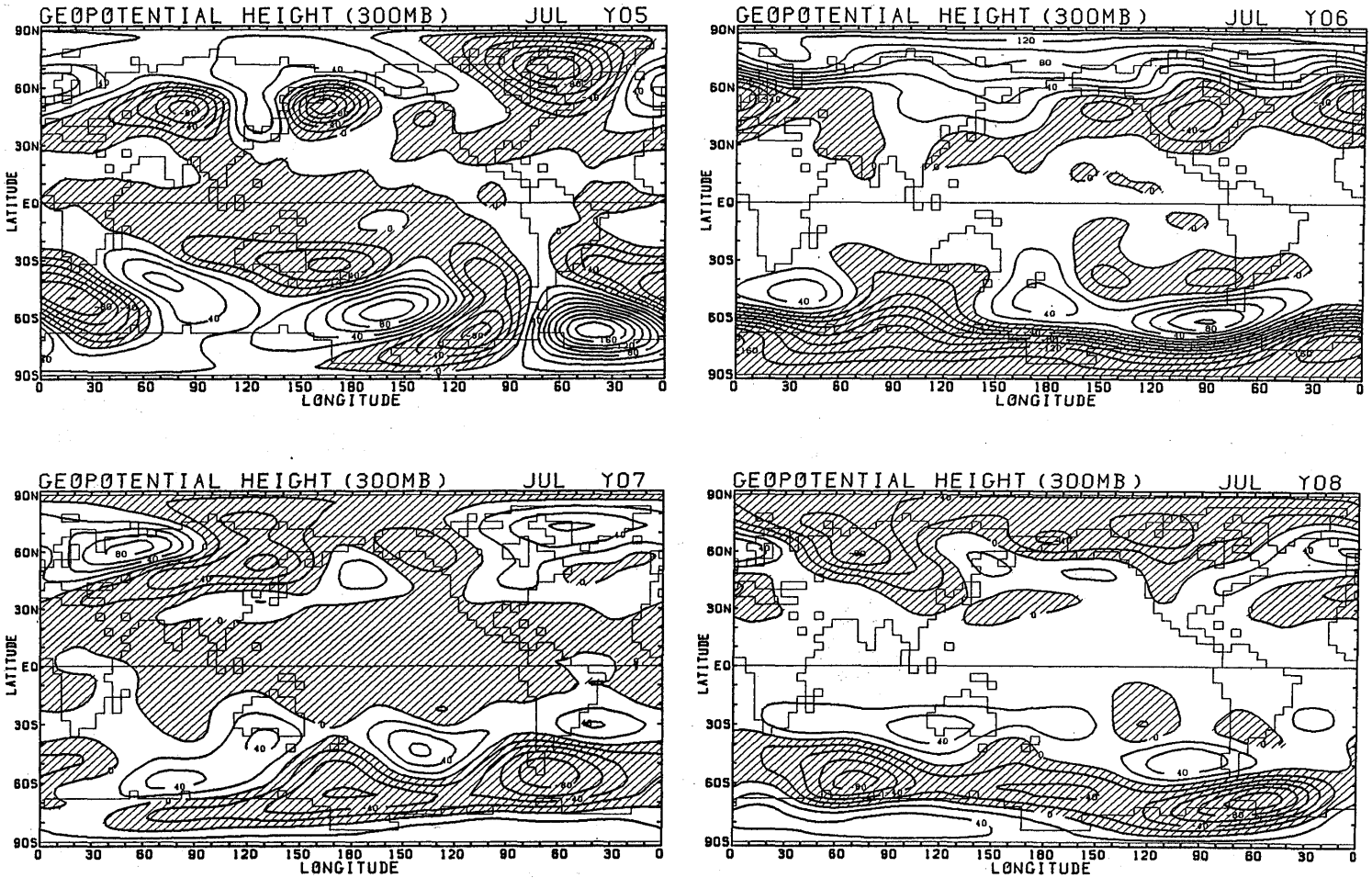

Fig. 2.7.3 Same as in Fig. 2.5.2 except for July of Y05, Y06, Y07 and Y08.

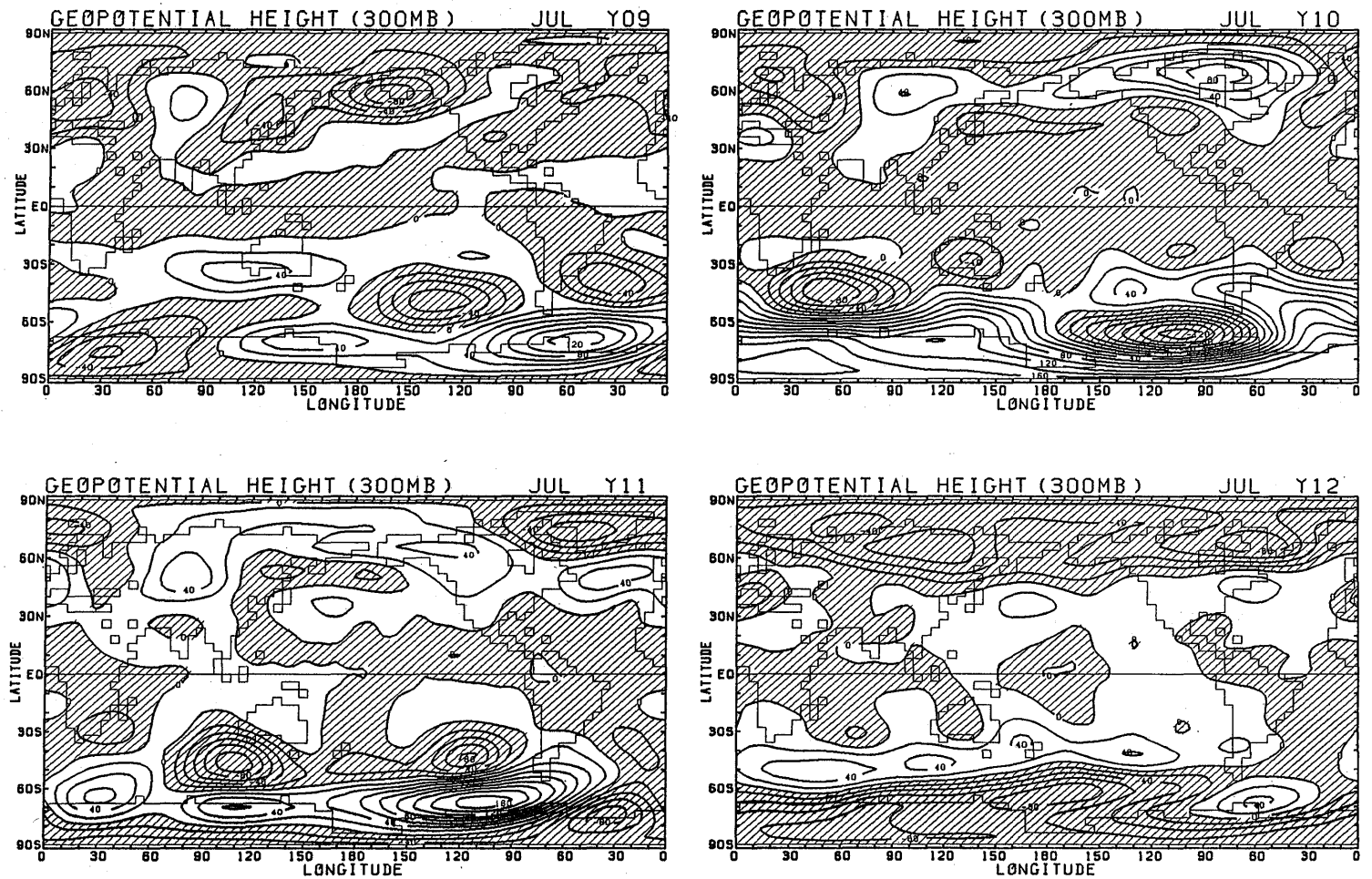

Fig. 2.7.4 Same as in Fig. 2.5.2 except for July of Y09, Y10, Y11 and Y12.

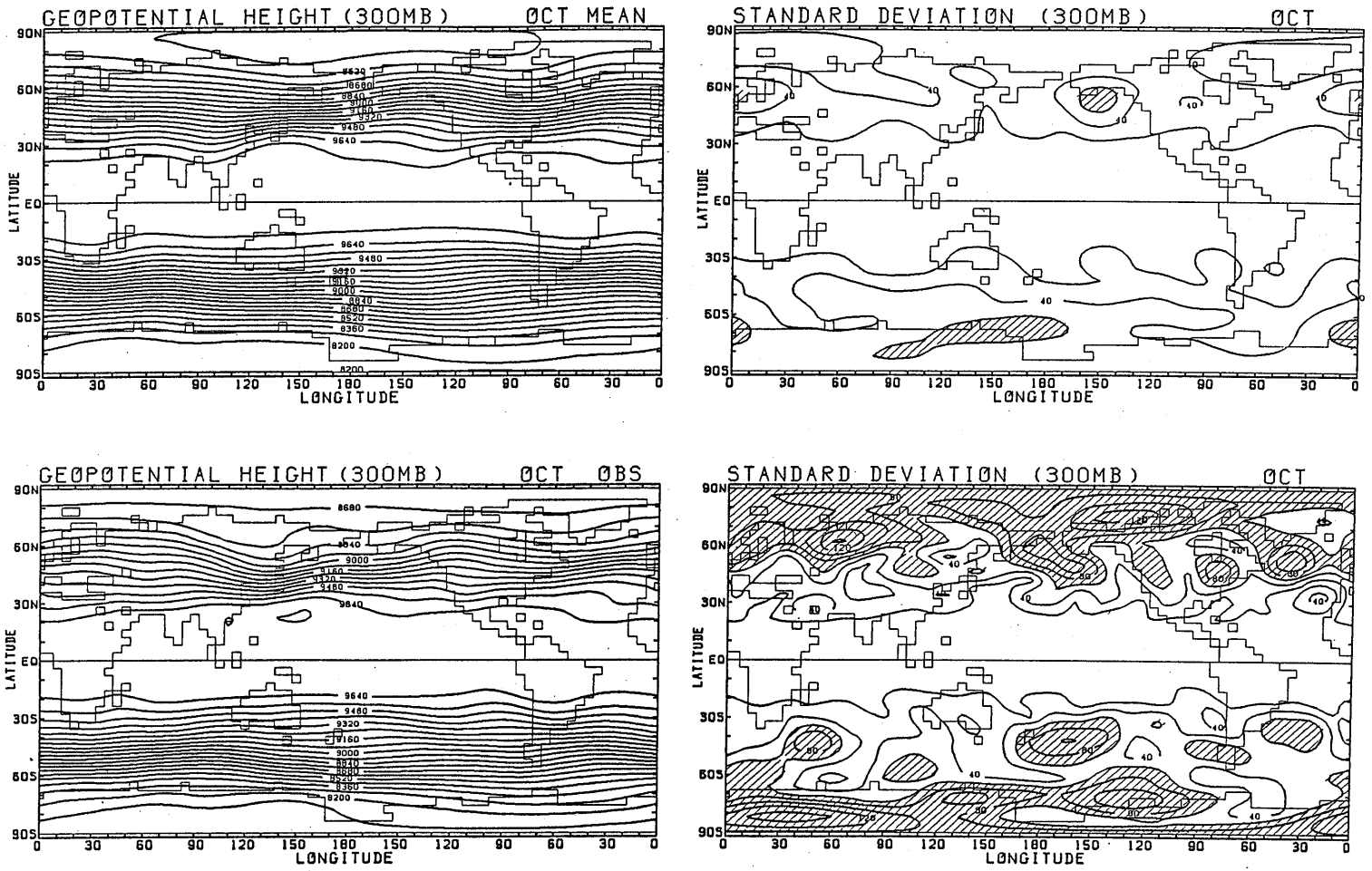

Fig. 2.8.1 Same as in Fig. 2.5.1 except for October.

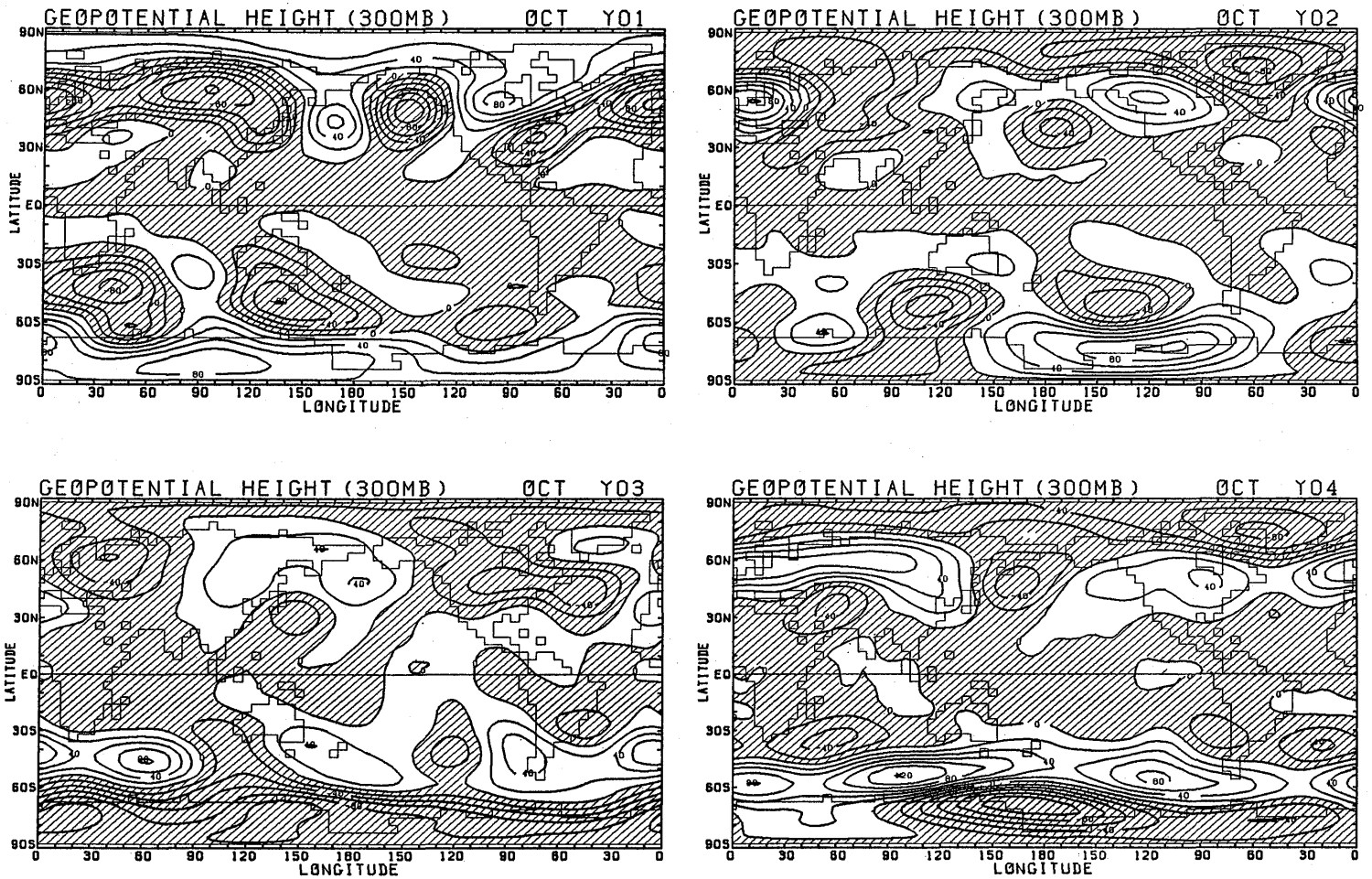

Fig. 2.8.2 Same as in Fig. 2.5.2 except for October of Y01, Y02, Y03 and Y04.

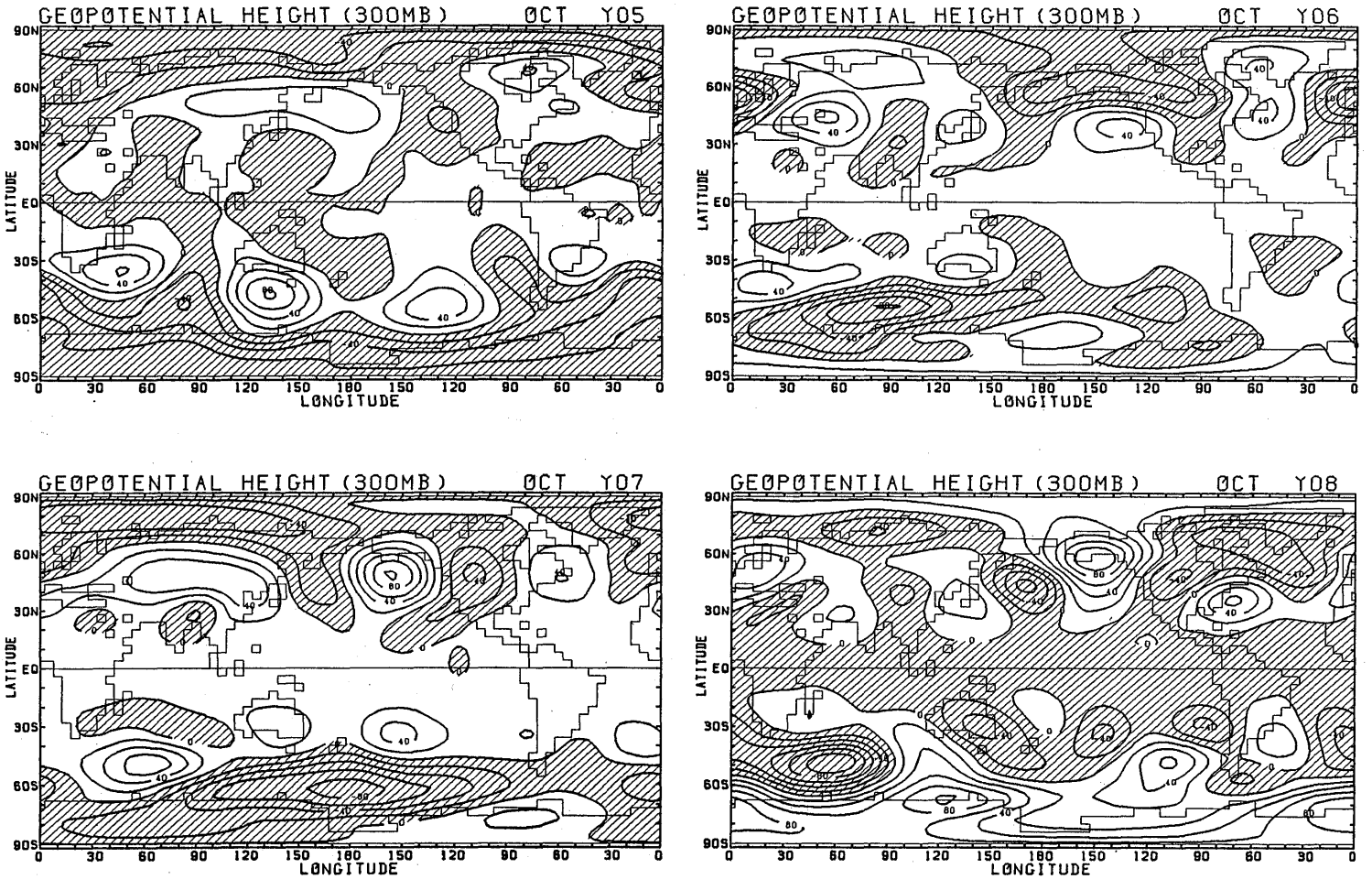

Fig. 2.8.3 Same as in Fig. 2.5.2 except for October of Y05, Y06, Y07 and Y08.

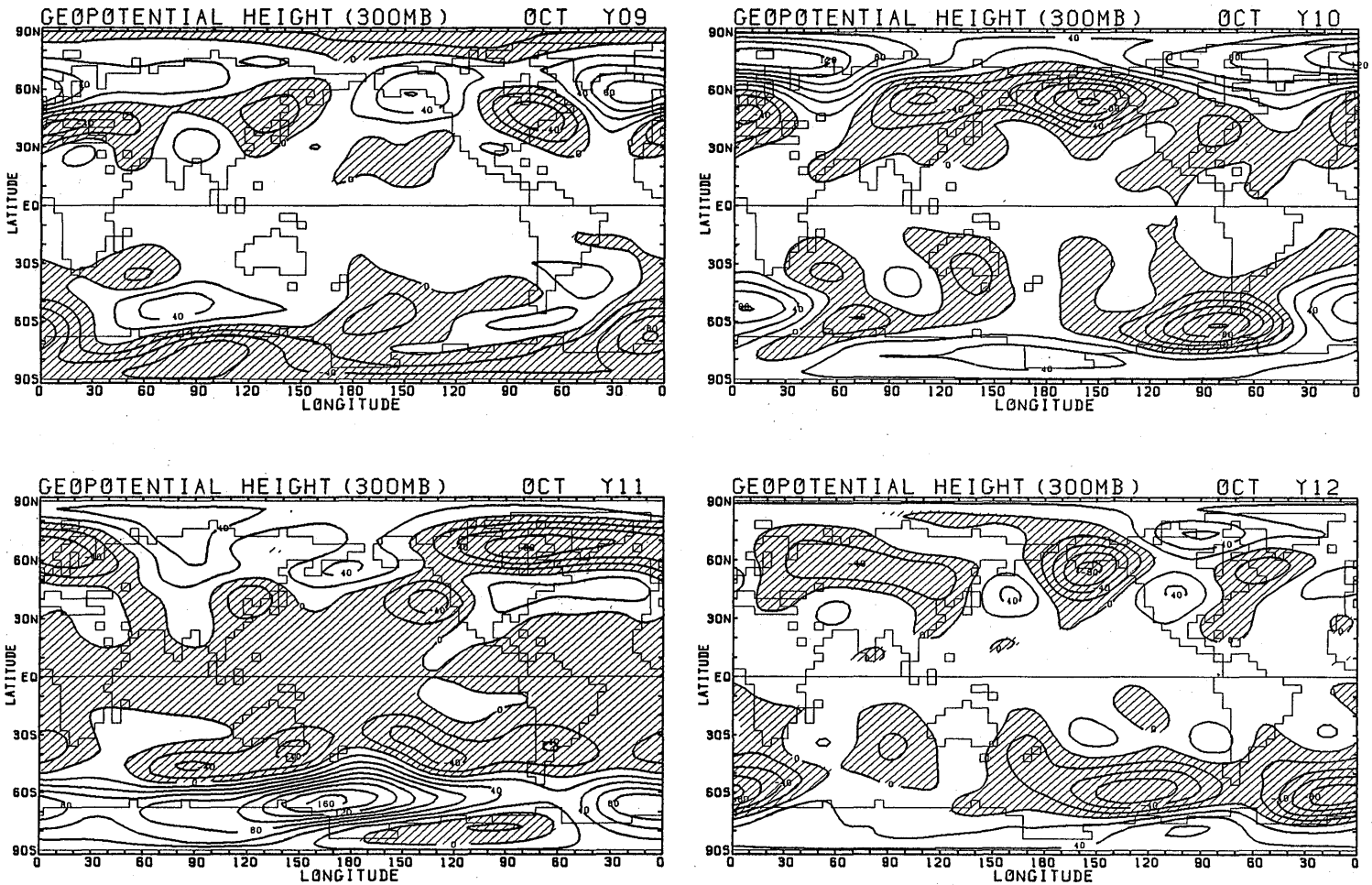

Fig. 2.8.4 Same as in Fig. 2.5.2 except for October of Y09, Y10, Y11 and Y12.

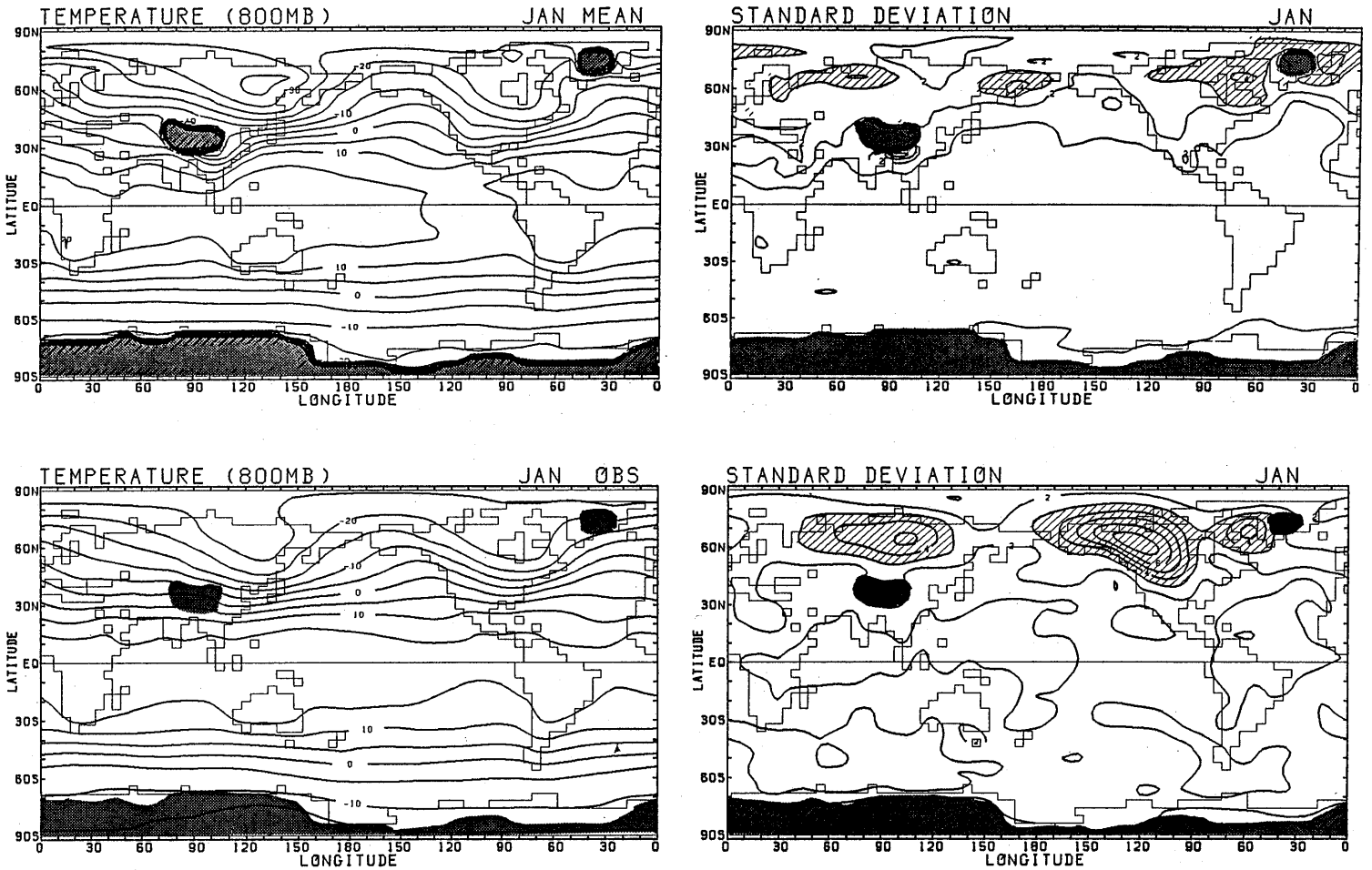

Fig. 2.9.1 Ensemble average of the monthly mean temperature at 800 mb (upper left panel) and the standard deviation from the ensemble average (upper right panel) for model January in ℃. The lower panels are corresponding climate values obtained from the analyzed data of the ECMWF. The contour interval of the lefthand panels is 5℃. The contour interval of the righthand panels is 1℃ and the area over 3℃ is shaded.

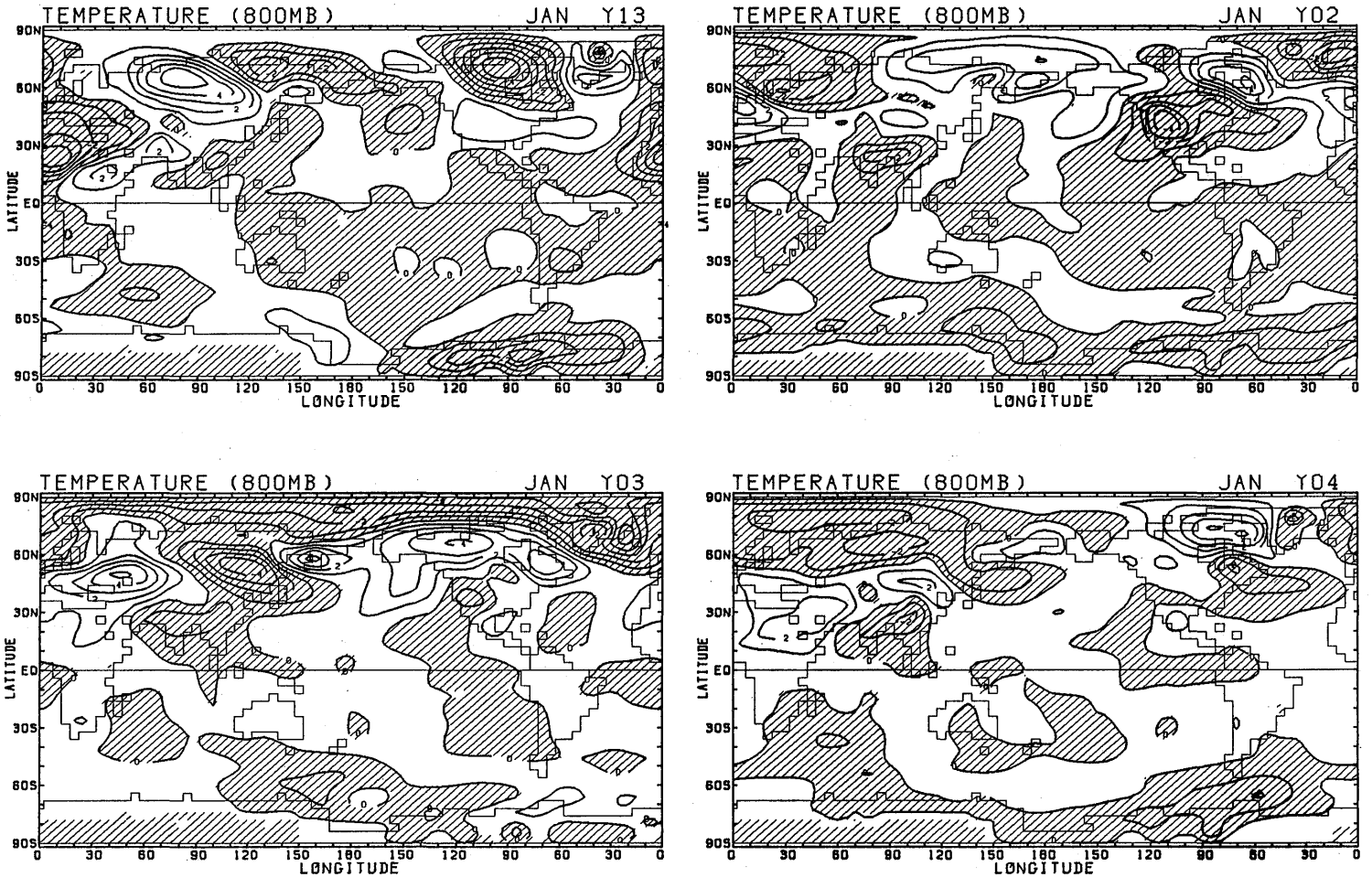

Fig. 2.9.2 Deviation of the monthly mean temperature at 800 mb in January of Y13, Y02, Y03 and Y04 from the ensemble average shown in the upper left panel of Fig. 2.9.1. The contour interval is 1℃. Negative area is shaded.

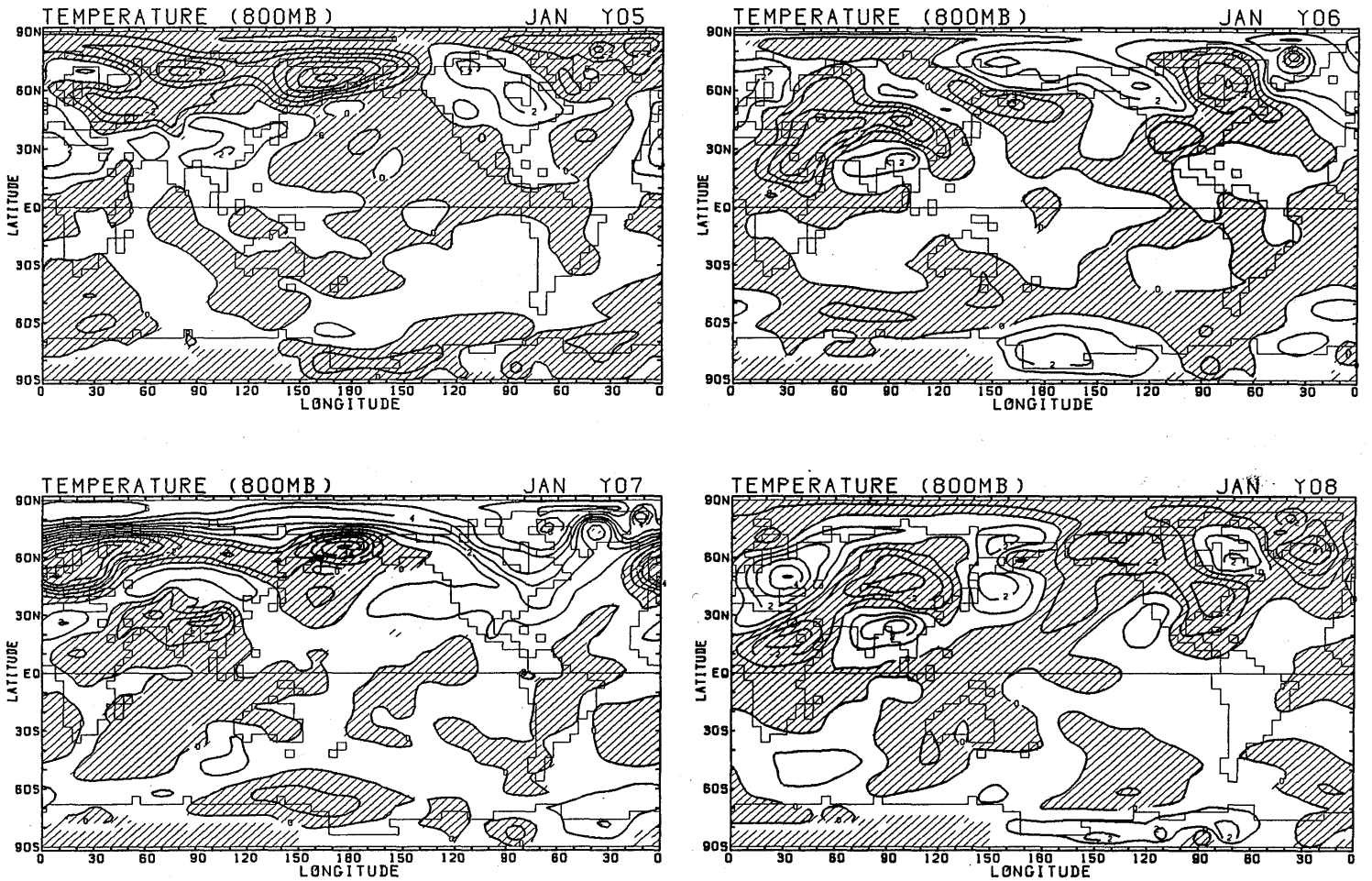

Fig. 2.9.3 Same as in Fig. 2.9.2 except for Y05, Y06, Y07 and Y08.

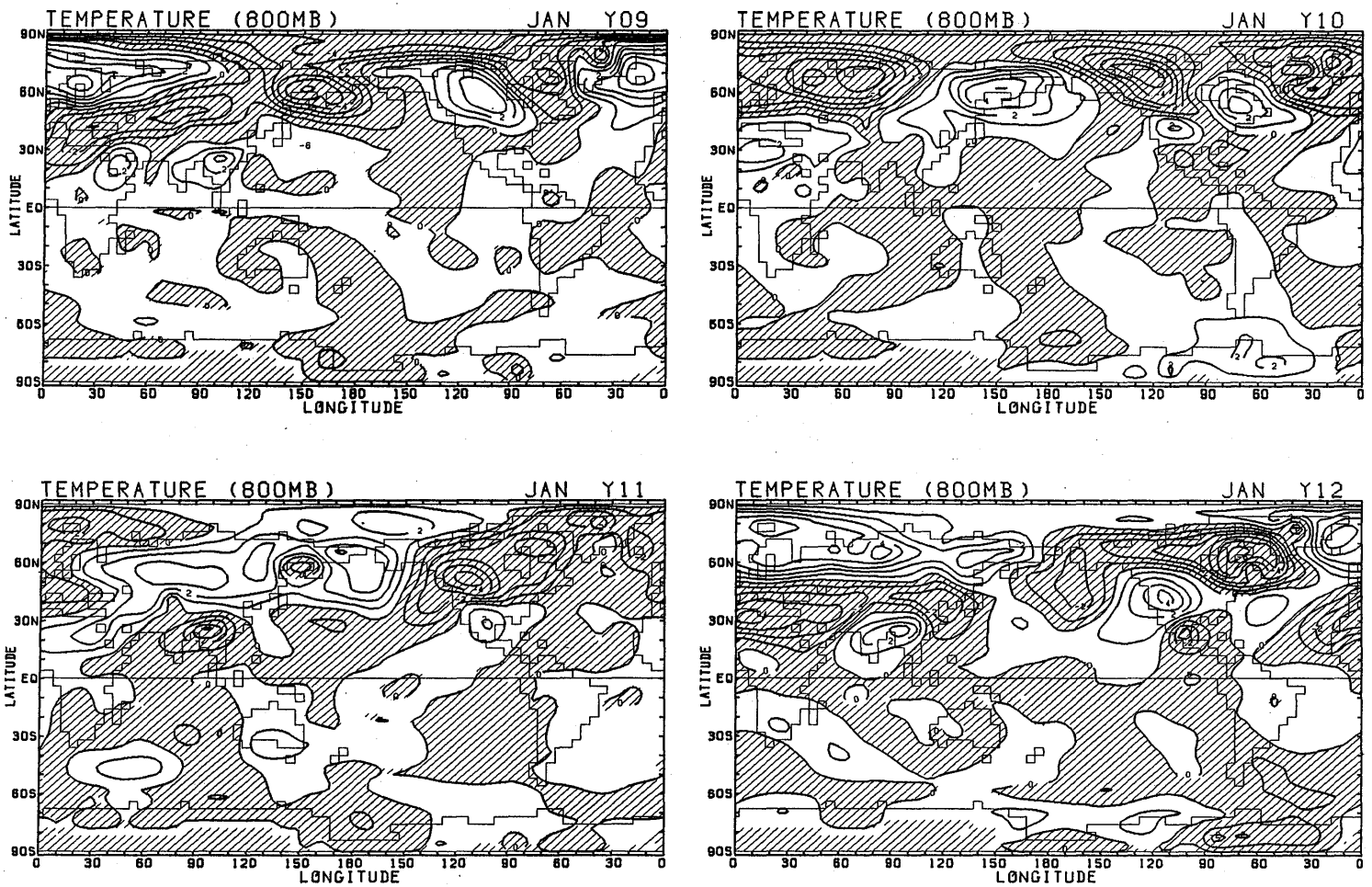

Fig. 2.9.4 Same as in Fig. 2.9.2 except for Y09, Y10, Y11 and Y12.

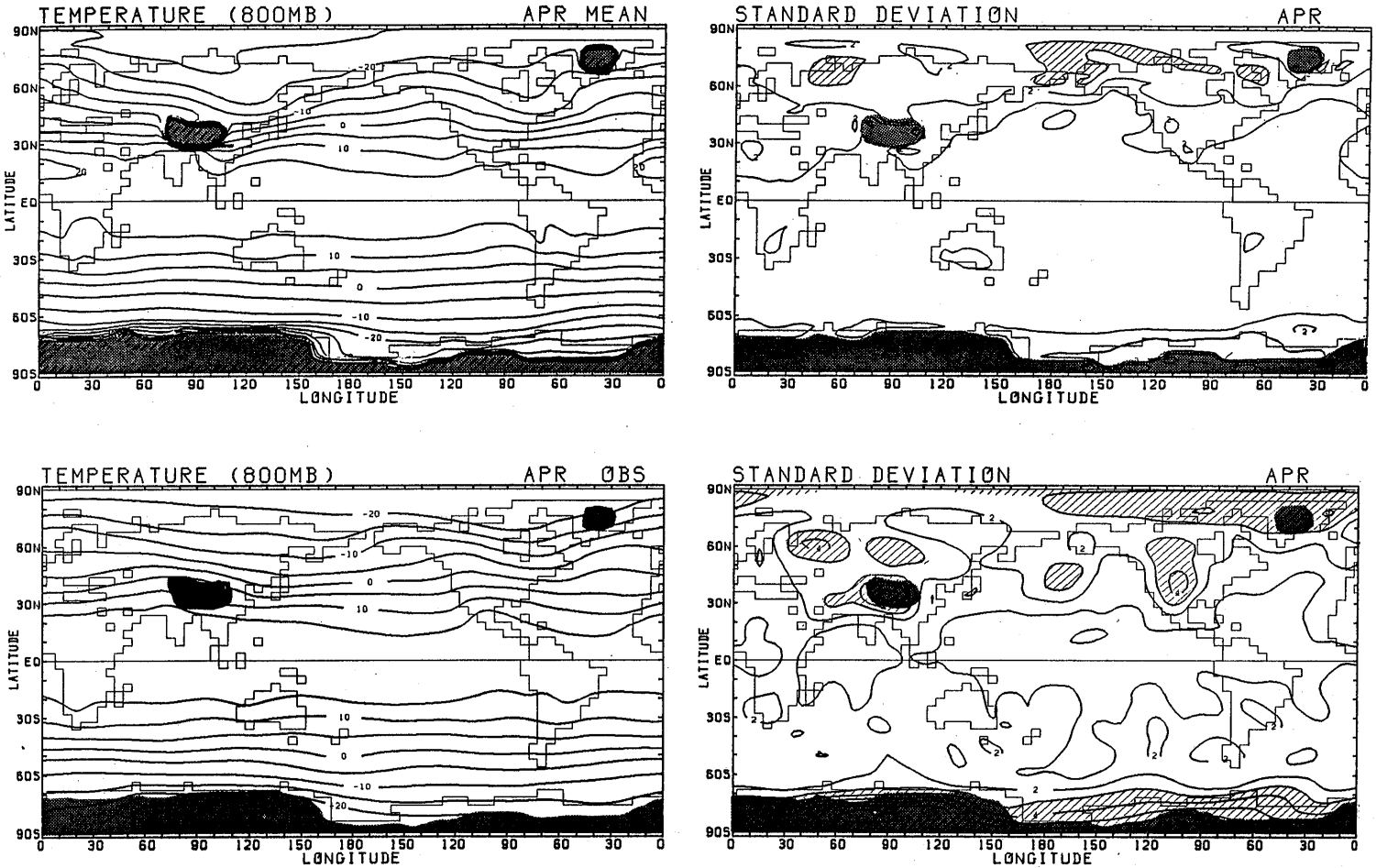

Fig. 2.10.1 Same as in Fig. 2.9.1 except for April.

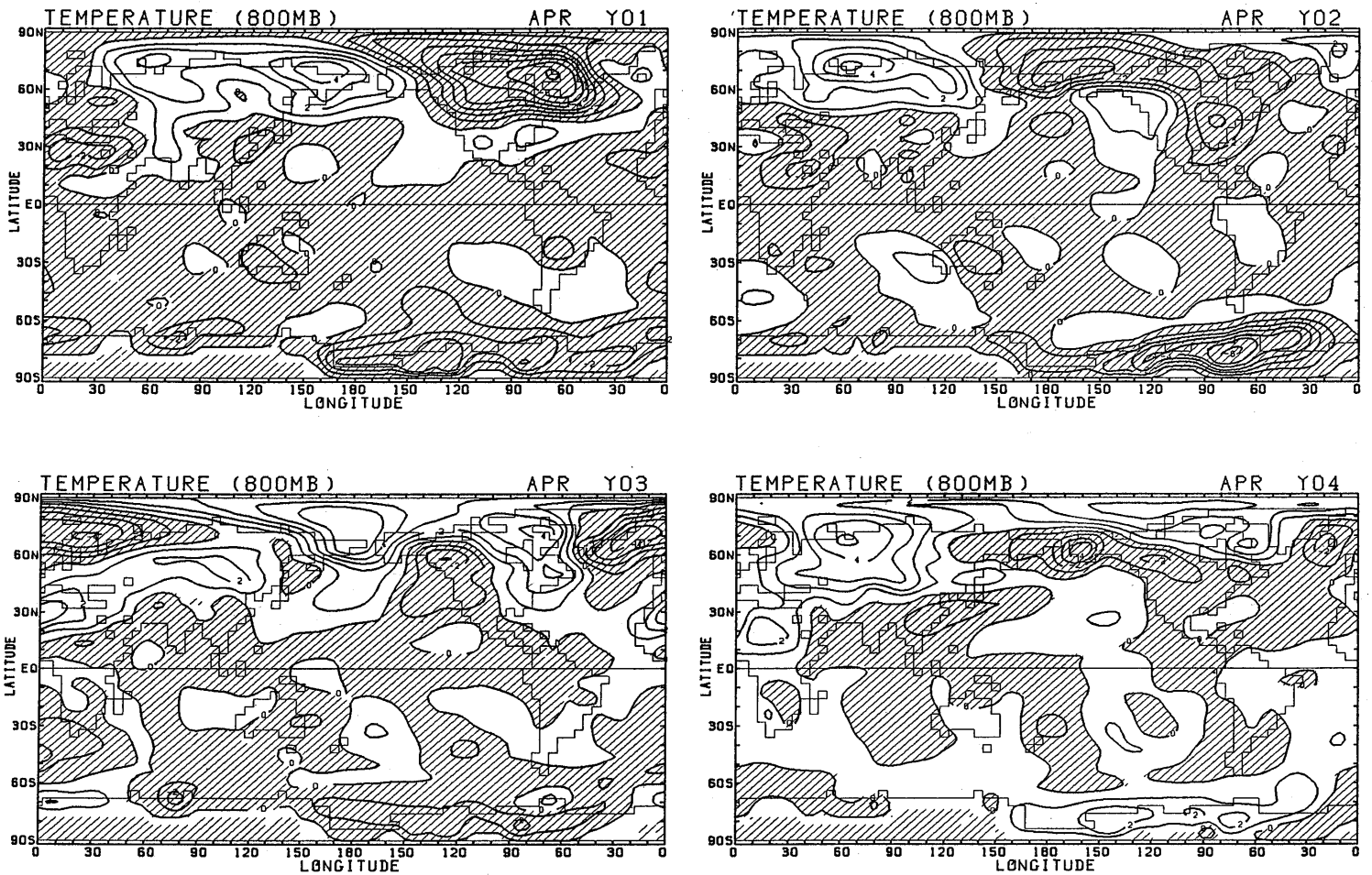

Fig. 2.10.2 Same as in Fig. 2.9.2 except for April of Y01, Y02, Y03 and Y04.

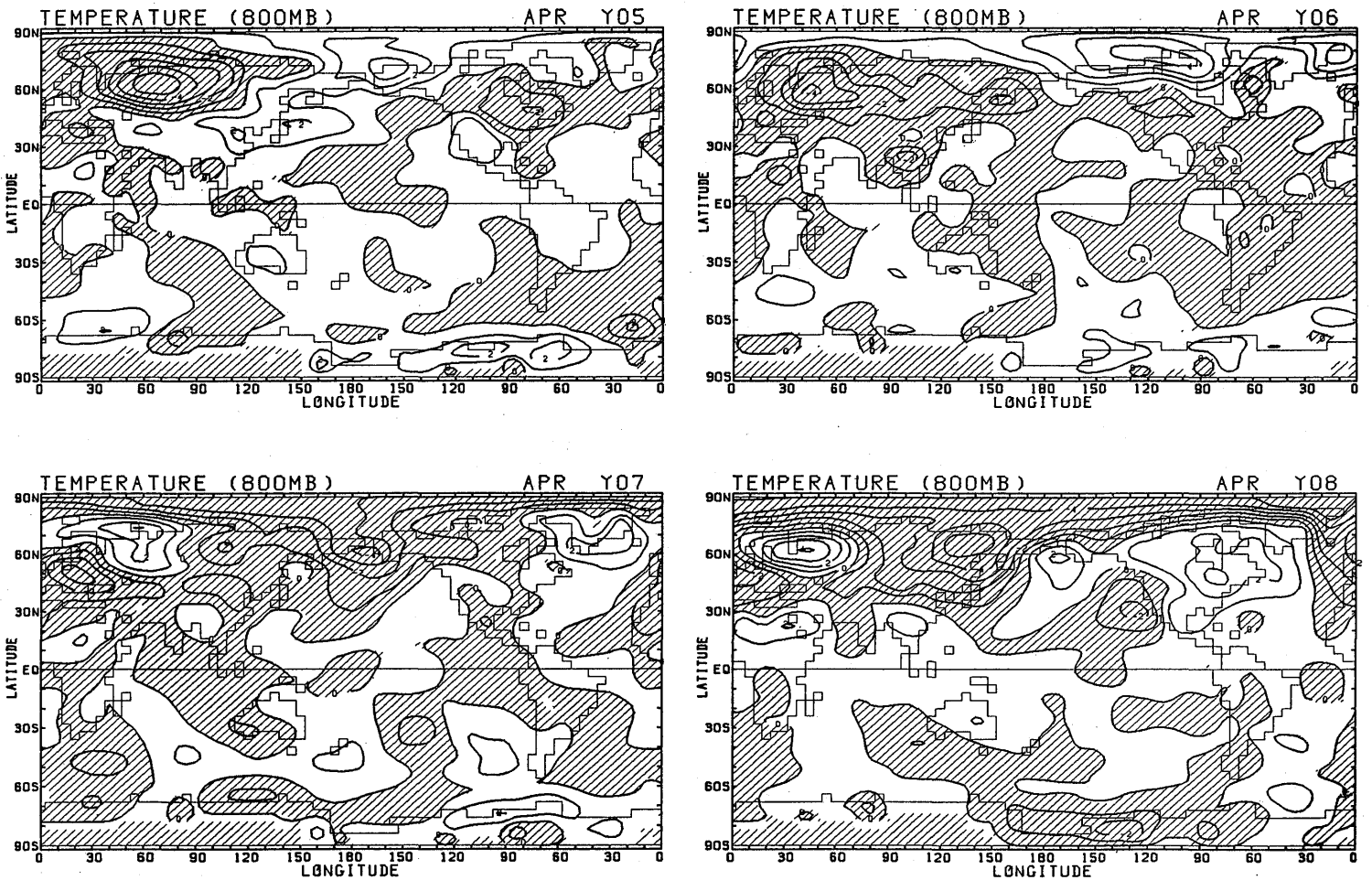

Fig. 2.10.3 Same as in Fig. 2.9.2 except for April of Y05, Y06, Y07 and Y08.

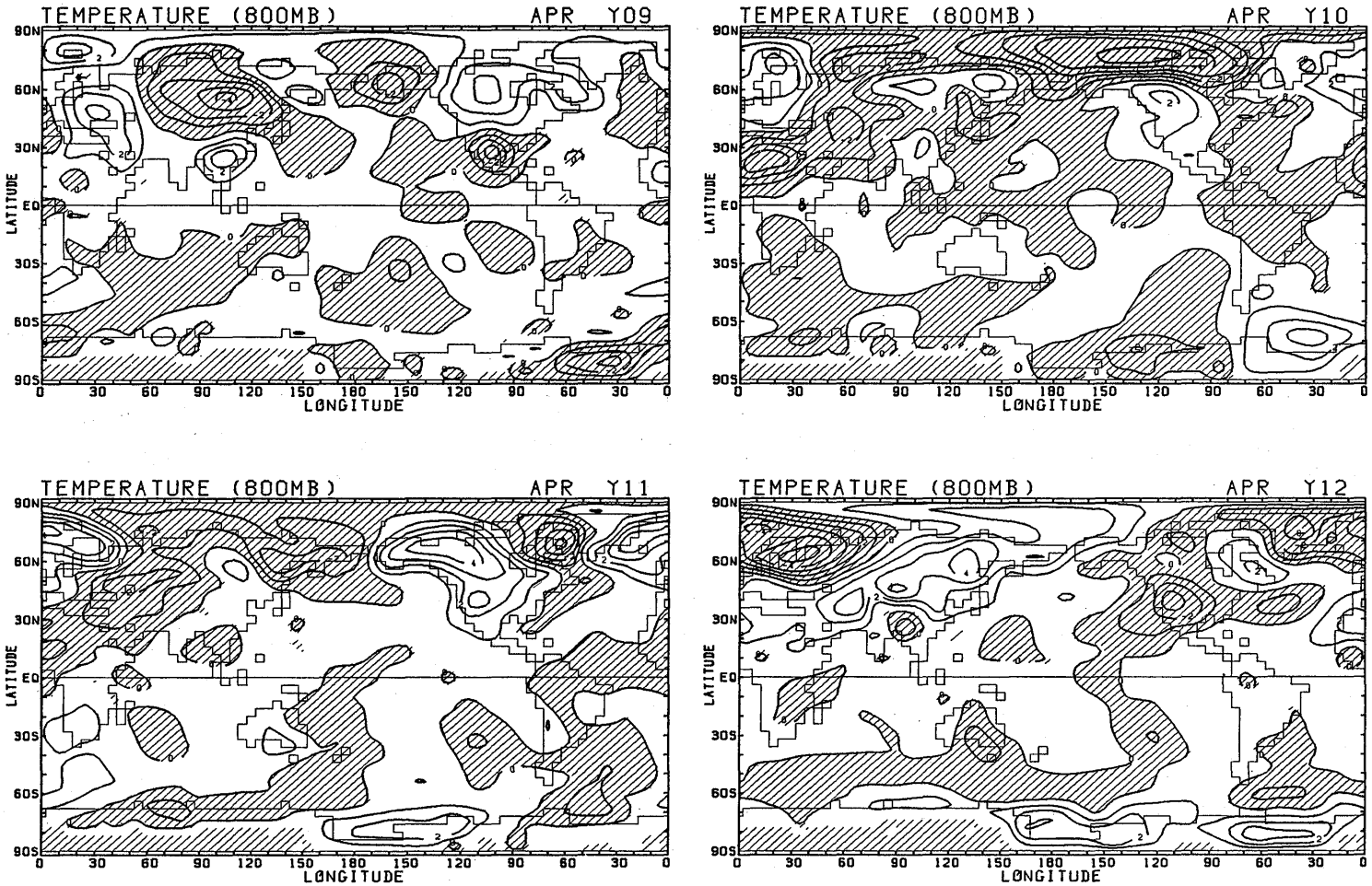

Fig. 2.10.4 Same as in Fig. 2.9.2 except for April of Y09, Y10, Y11 and Y12.

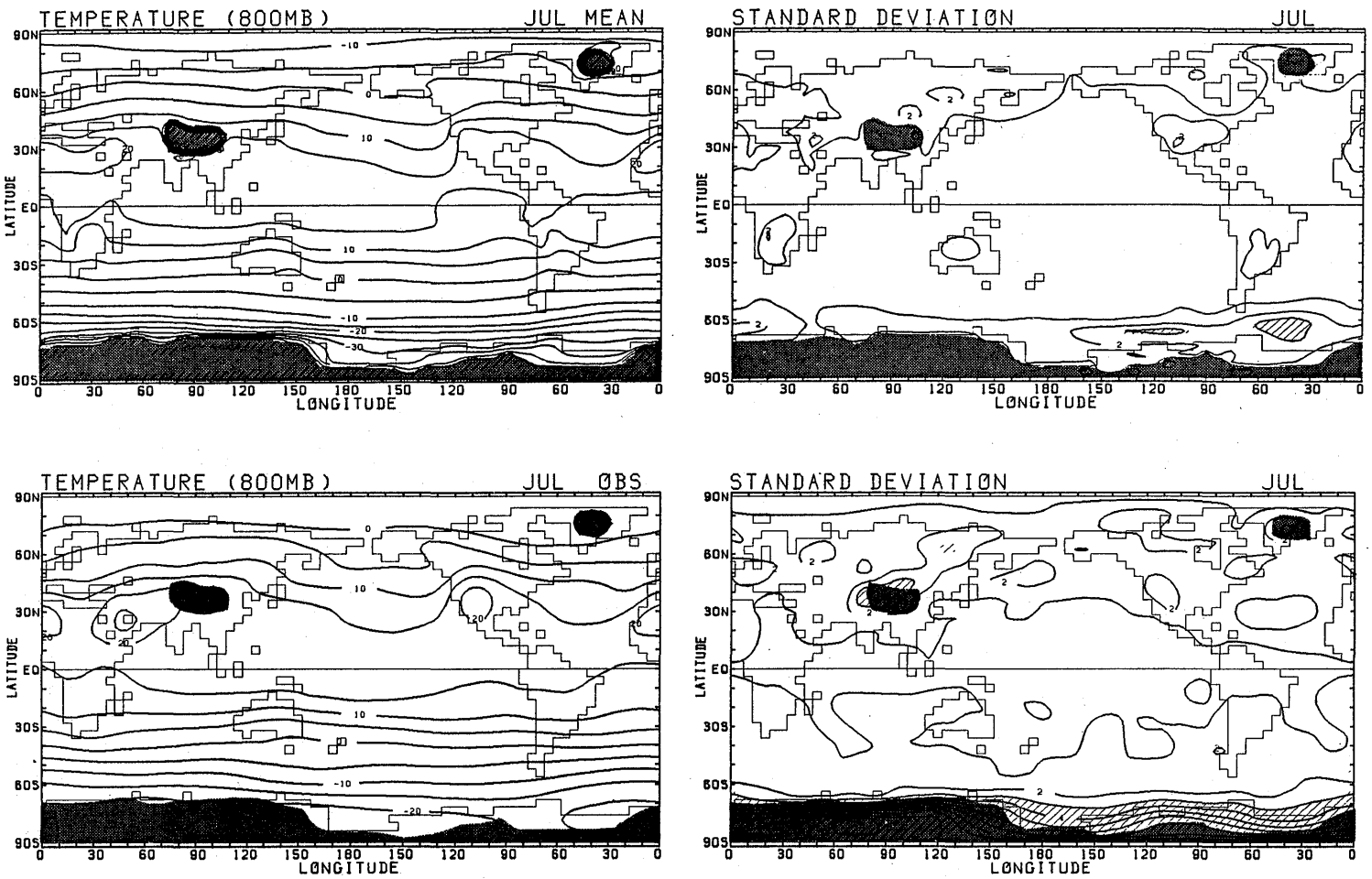

Fig. 2.11.1 Same as in Fig. 2.9.1 except for July.

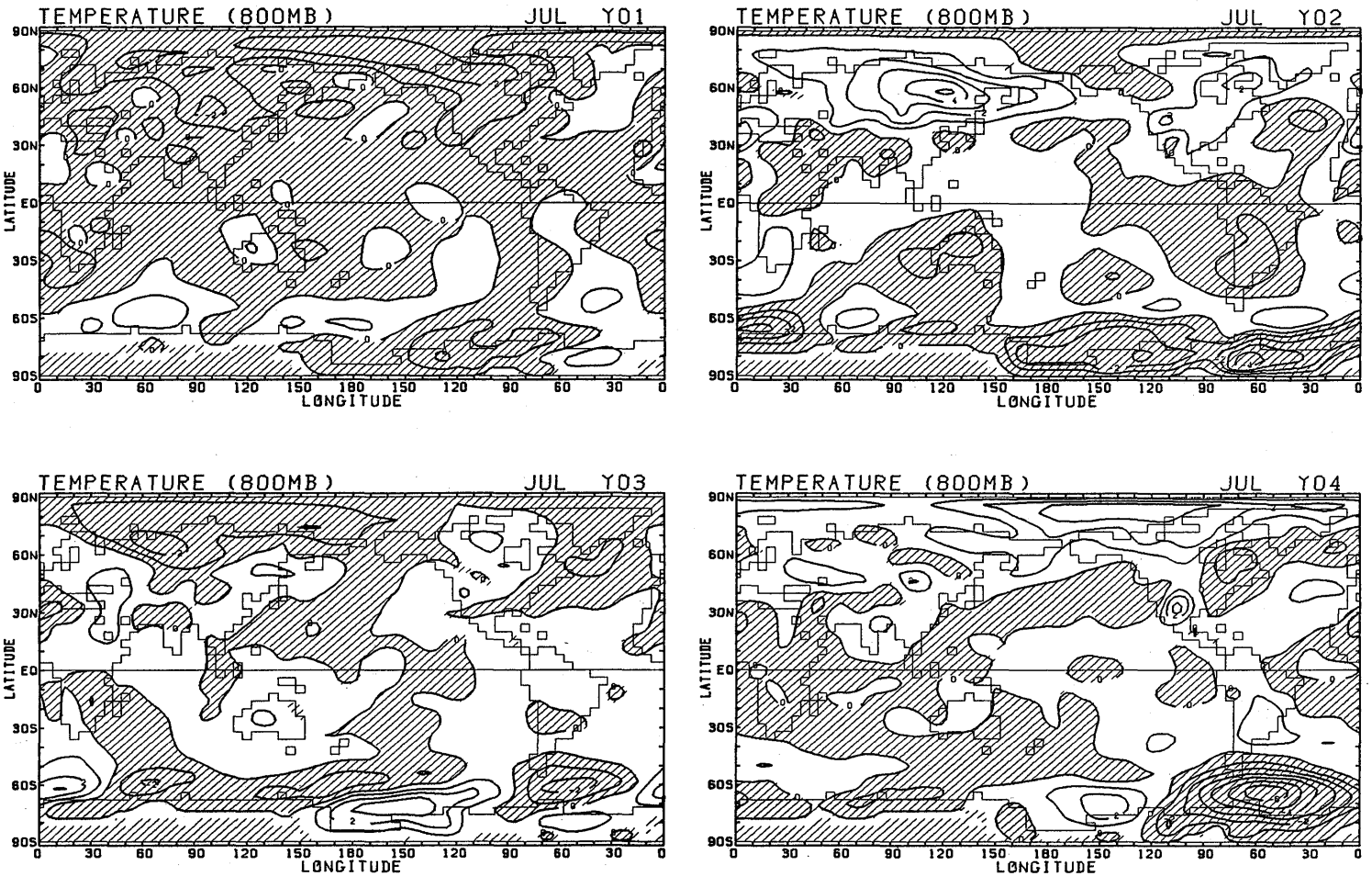

Fig. 2.11.2 Same as in Fig. 2.9.2 except for July of Y01, Y02, Y03 and Y04.

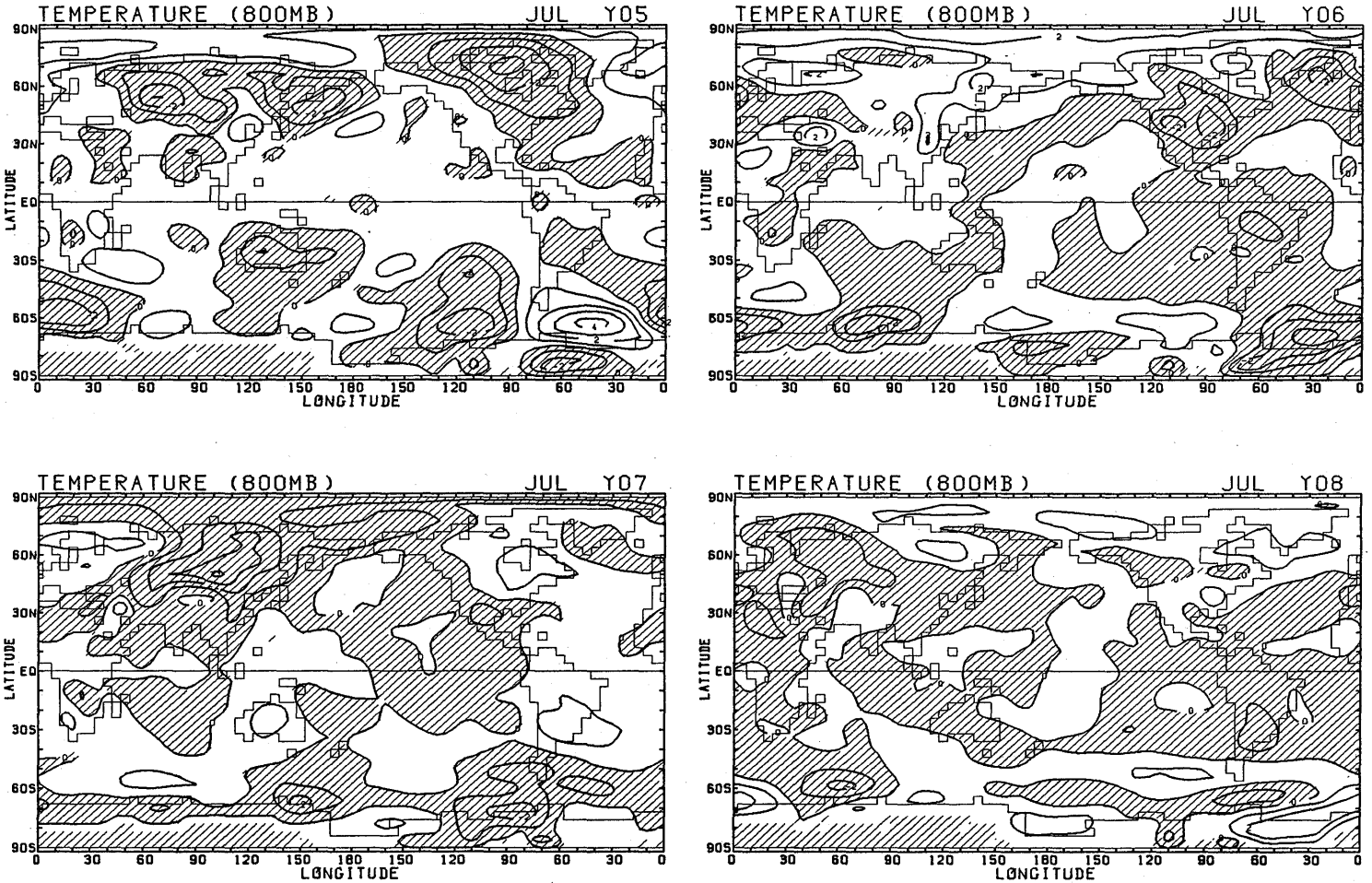

Fig. 2.11.3 Same as in Fig. 2.9.2 except for July of Y05, Y06, Y07 and Y08.

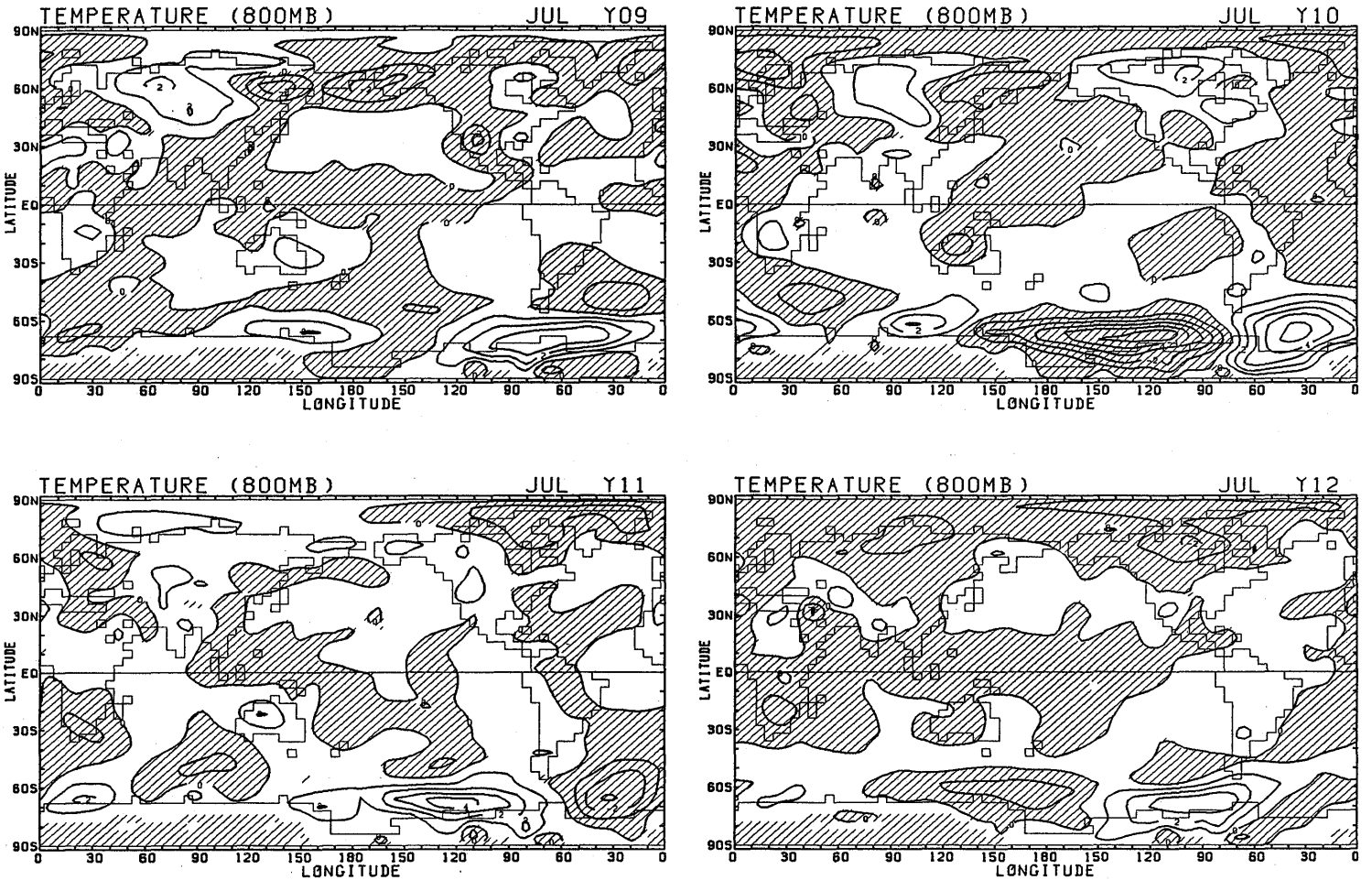

Fig. 2.11.4 Same as in Fig. 2.9.2 except for July of Y09, Y10, Y11 and Y12.

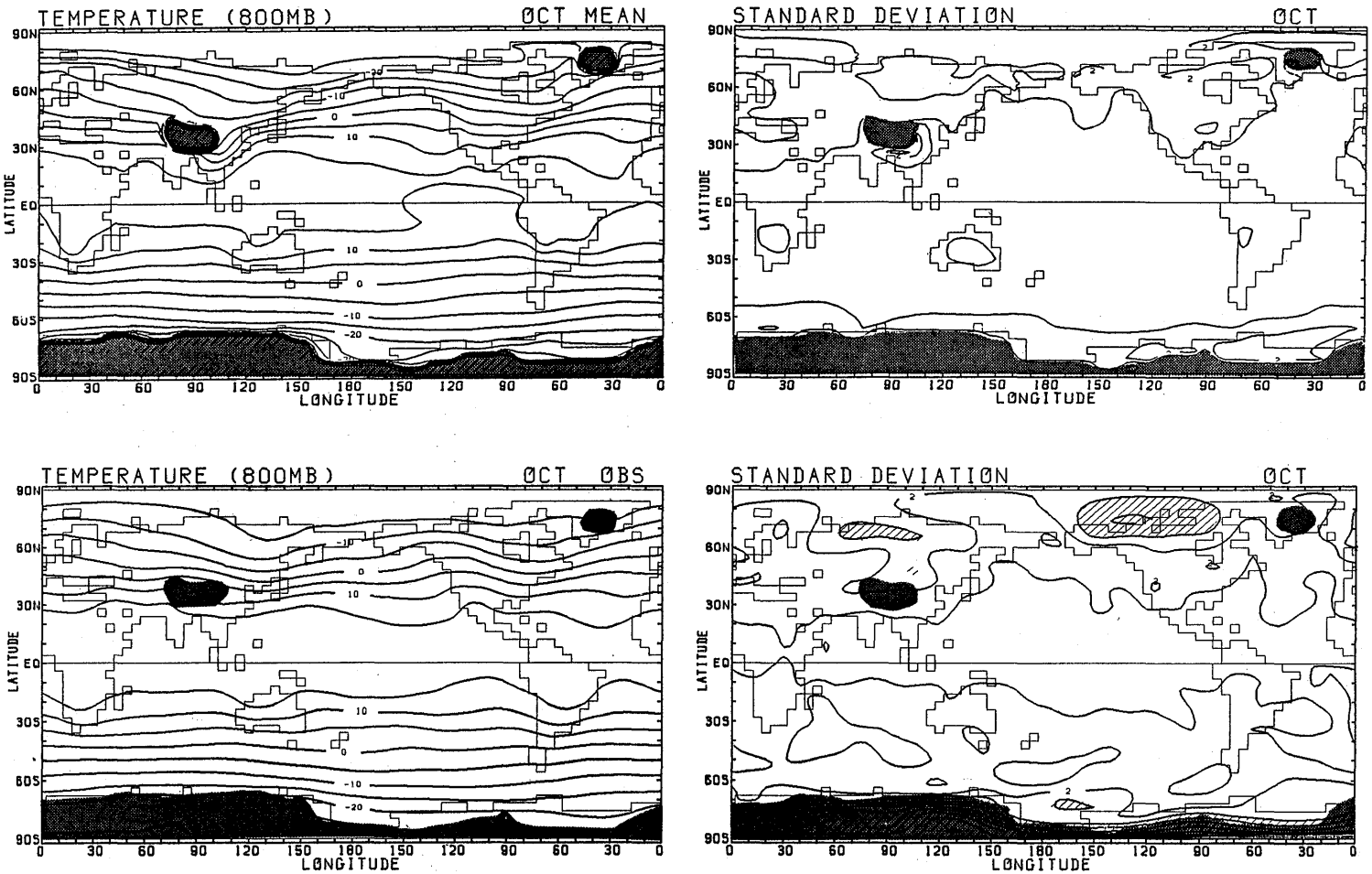

Fig. 2.12.1 Same as in Fig. 2.9.1 except for October.

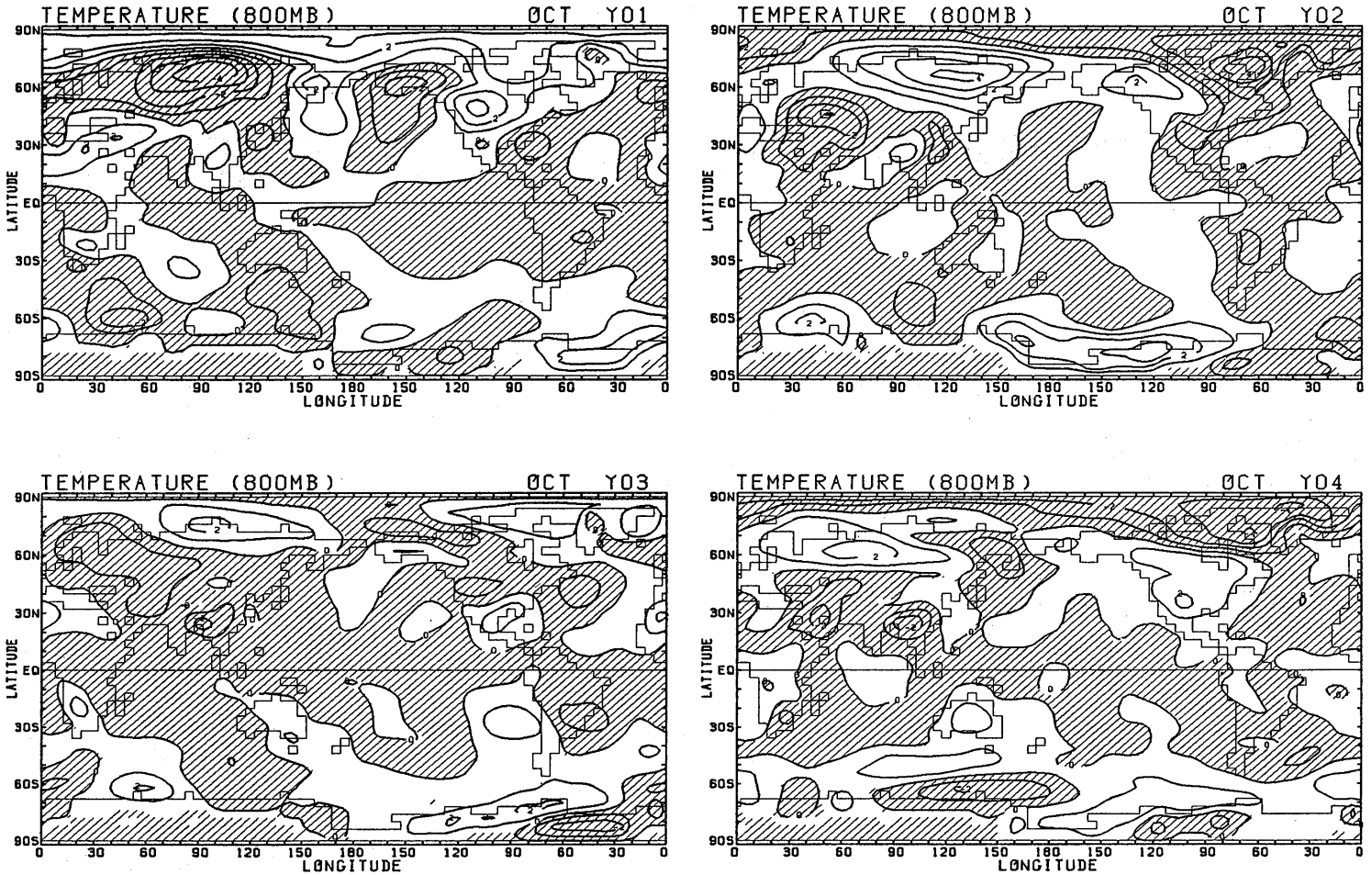

Fig. 2.12.2 Same as in Fig. 2.9.2 except for October of Y01, Y02, Y03 and Y04.

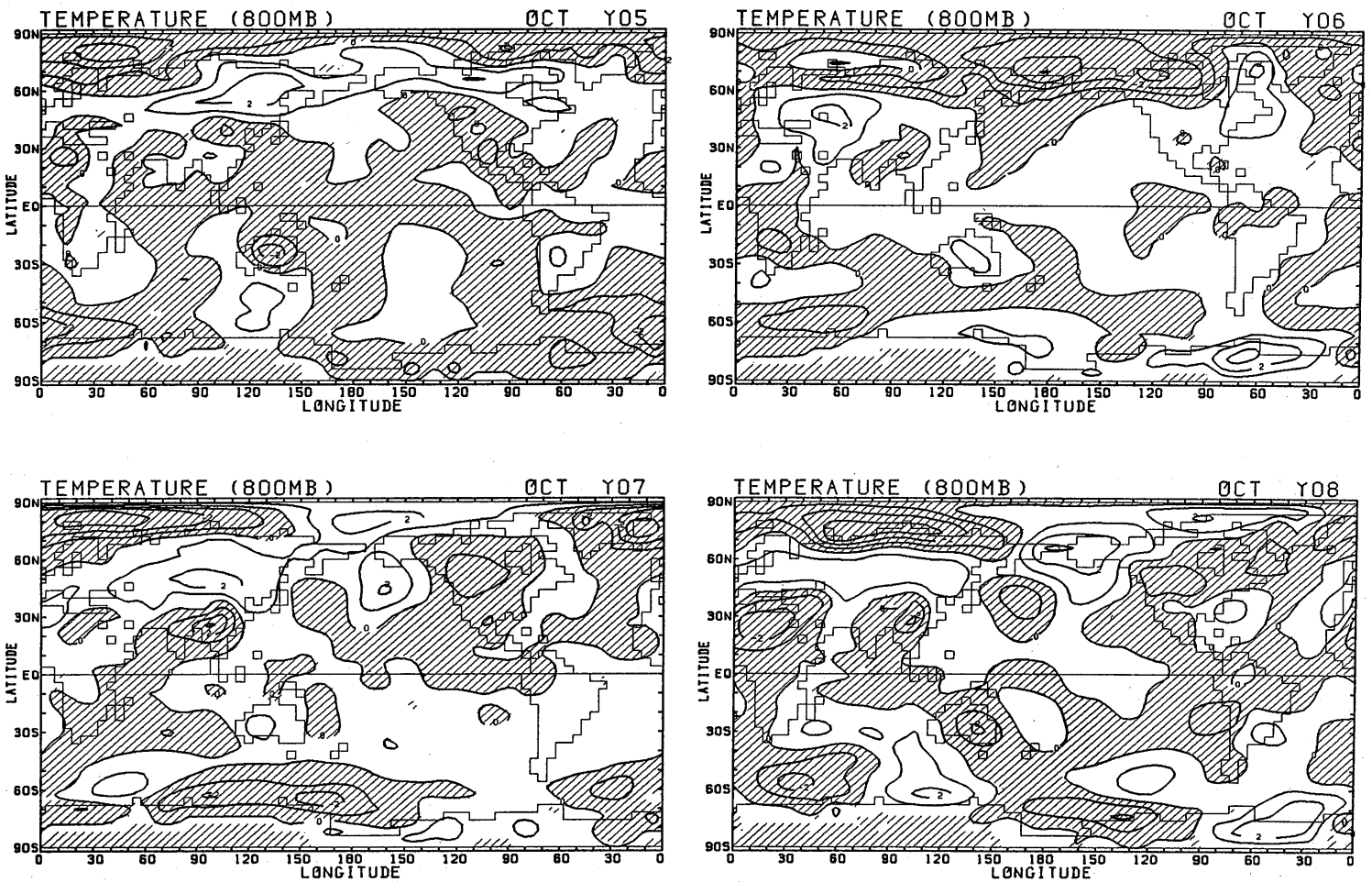

Fig. 2.12.3 Same as in Fig. 2.9.2 except for October of Y05, Y06, Y07 and Y08.

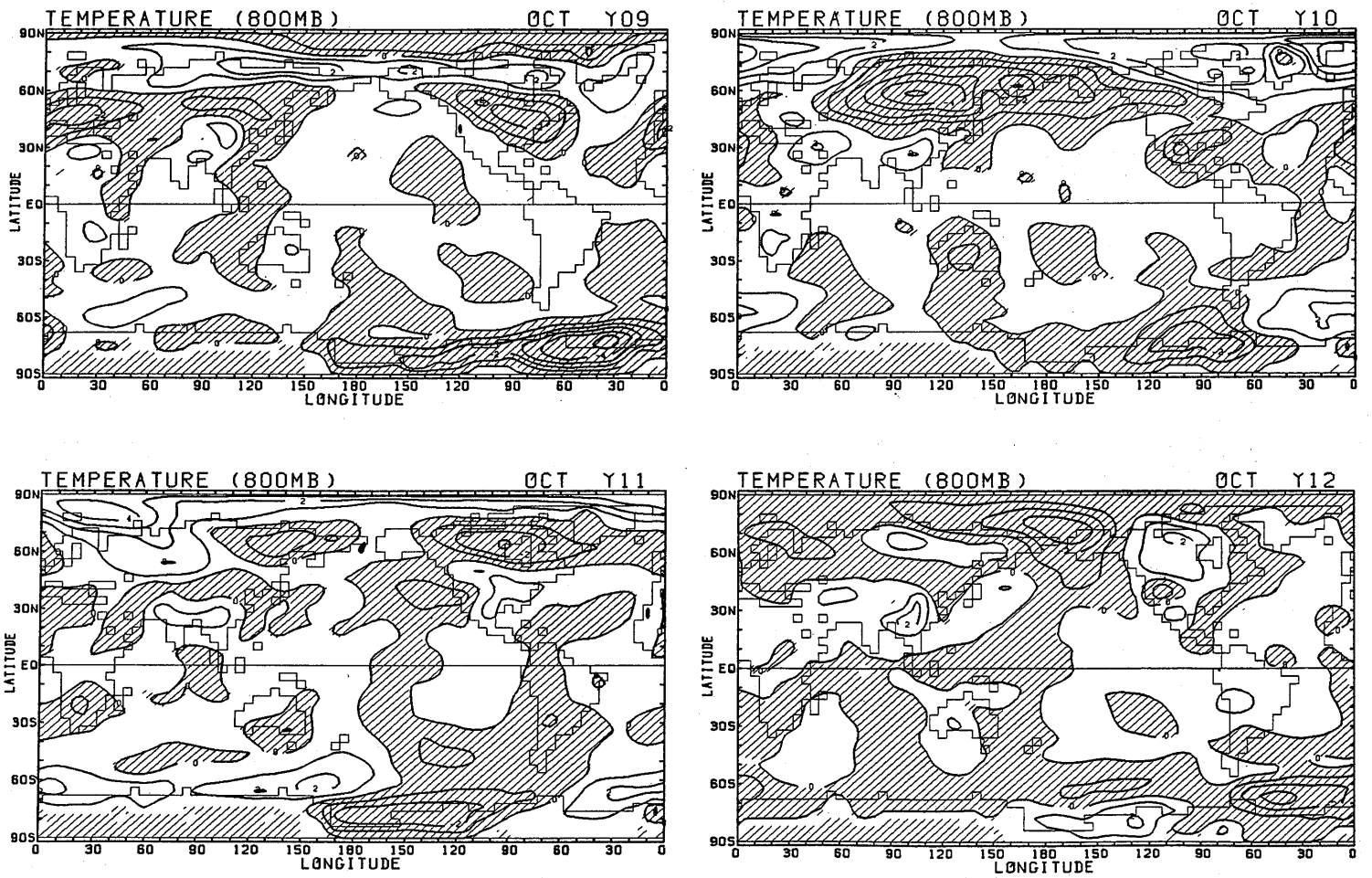

Fig. 2.12.4 Same as in Fig. 2.9.2 except for October of Y09, Y10, Y11 and Y12.

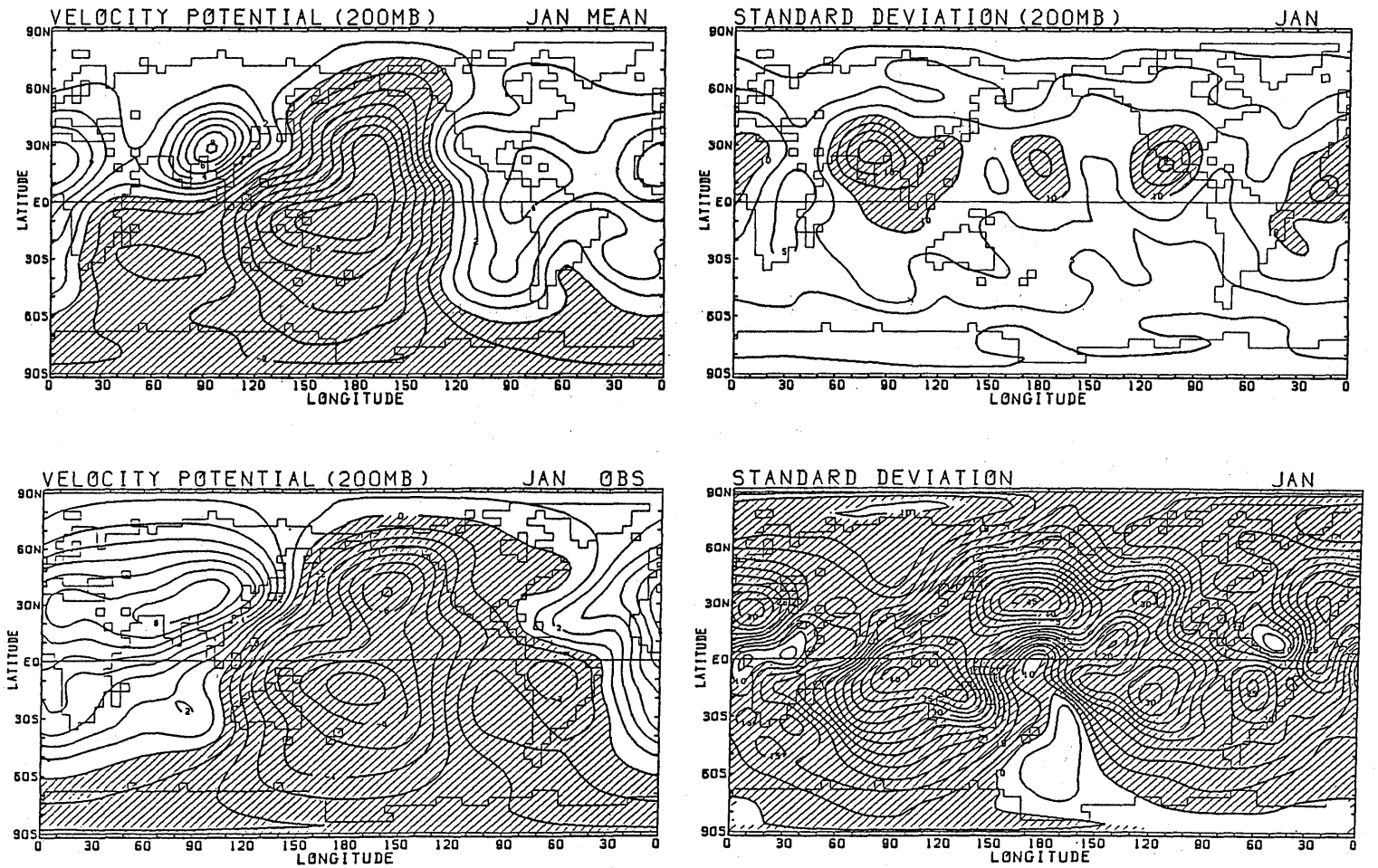

Fig. 2.13.1 Ensemble average of the monthly mean velocity potential at 200 mb (upper left panel) and the standard deviation from the ensemble average (upper right panel) for model January. The lower panels are corresponding climate values based on the analyzed data of the ECMWF. The contour interval of the lefthand panels is 10^6 m^2 s^{-1} and the negative area is shaded. The contour interval of the righthand panels is 2.5×10^5 m^2 s^{-1} and the area over 10×10^5 m^2s^{-1} is shaded.

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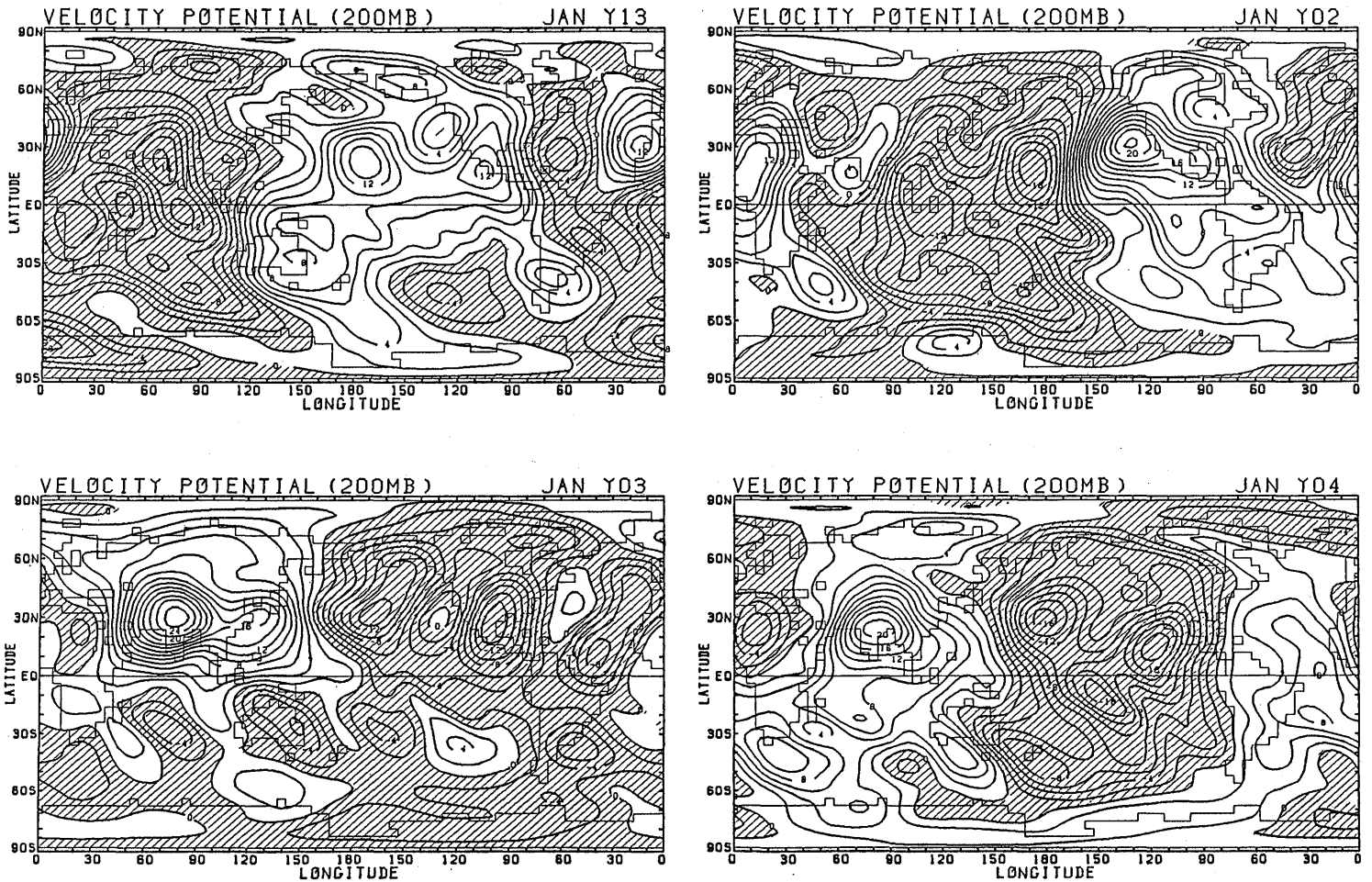


Fig. 2.13.2 Deviation of the monthly mean velocity potential at 200 mb in January of Y13, Y02, Y03 and Y04. The contour interval is 2.0×10^5 m^2 s^{-1} and the negative area is shaded.

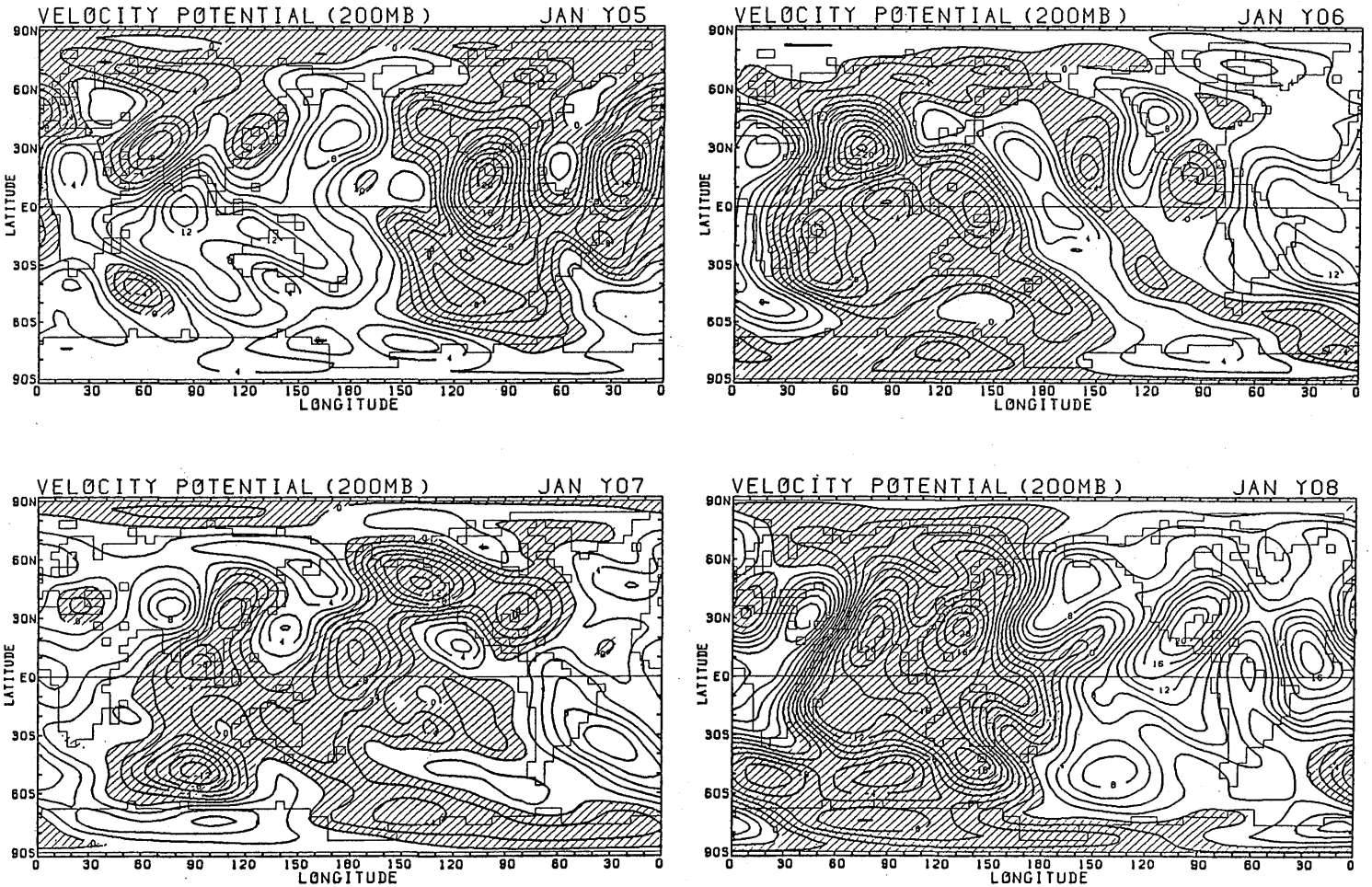


Fig. 2.13.3 Same as in Fig. 2.13.2 except for Y05, Y06, Y07 and Y08.

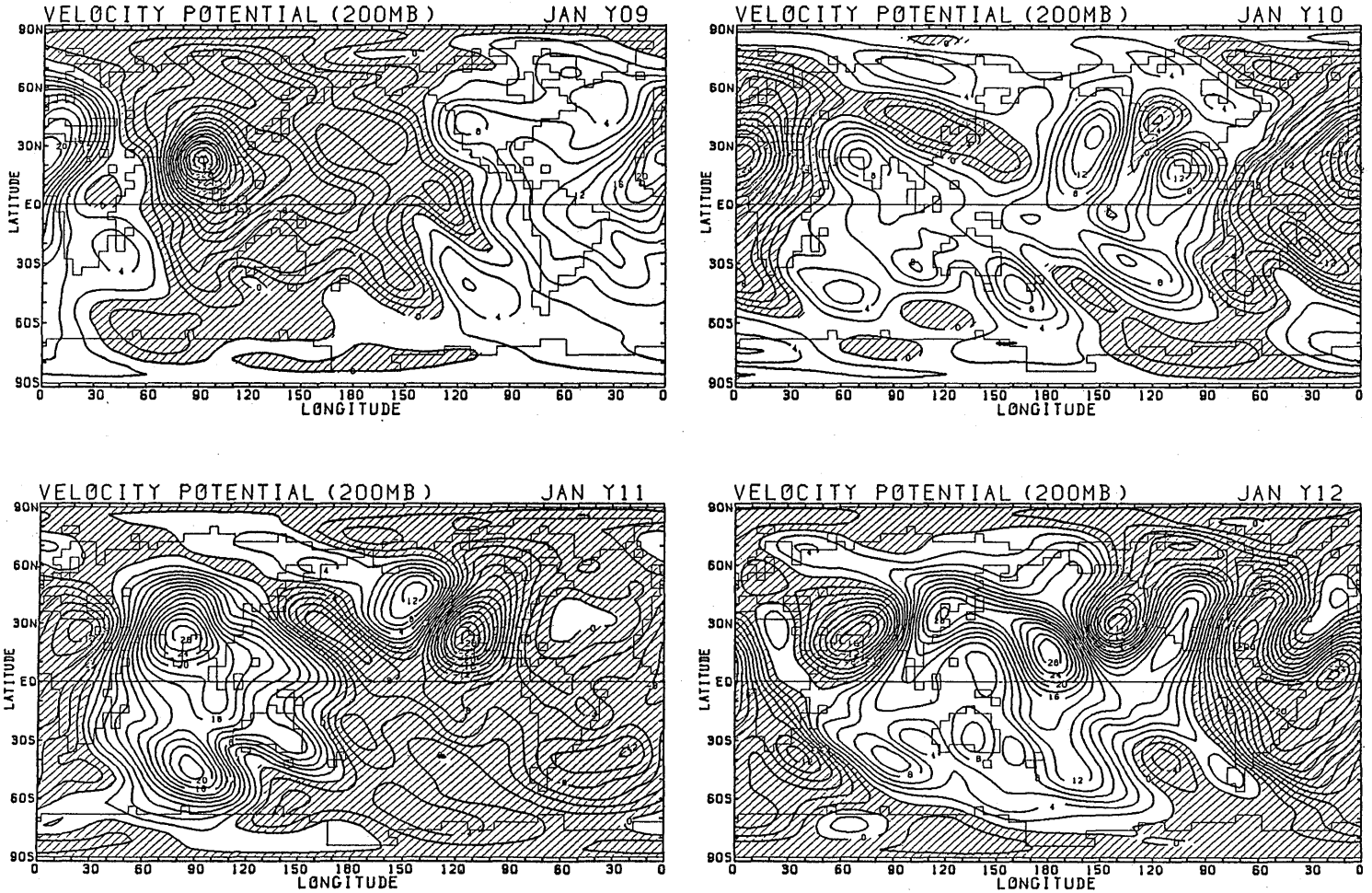


Fig. 2.13.4 Same as in Fig. 2.13.2 except for Y09, Y10, Y11 and Y12.

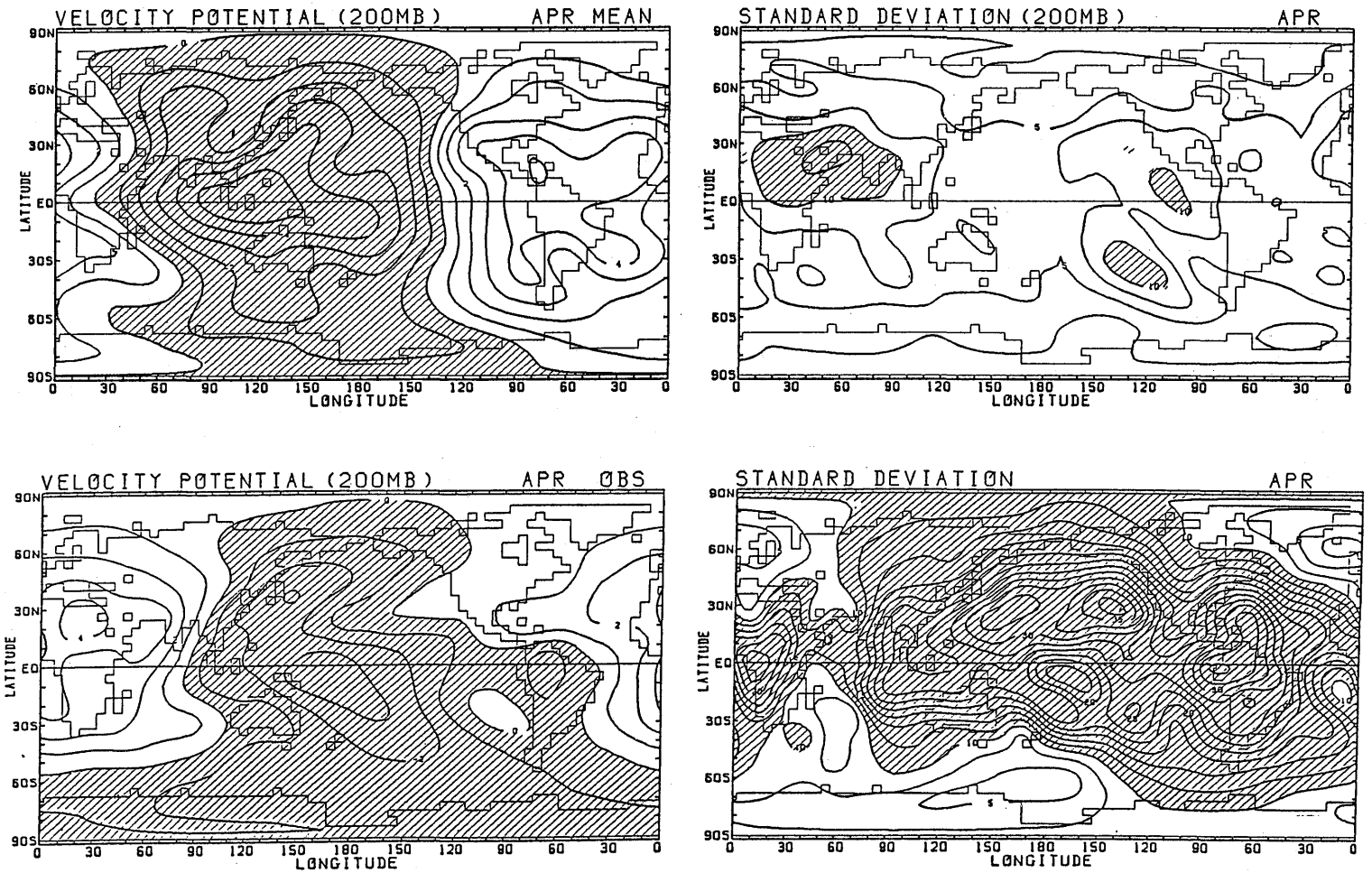


Fig. 2.14.1 Same as in Fig. 2.13.1 except for April.

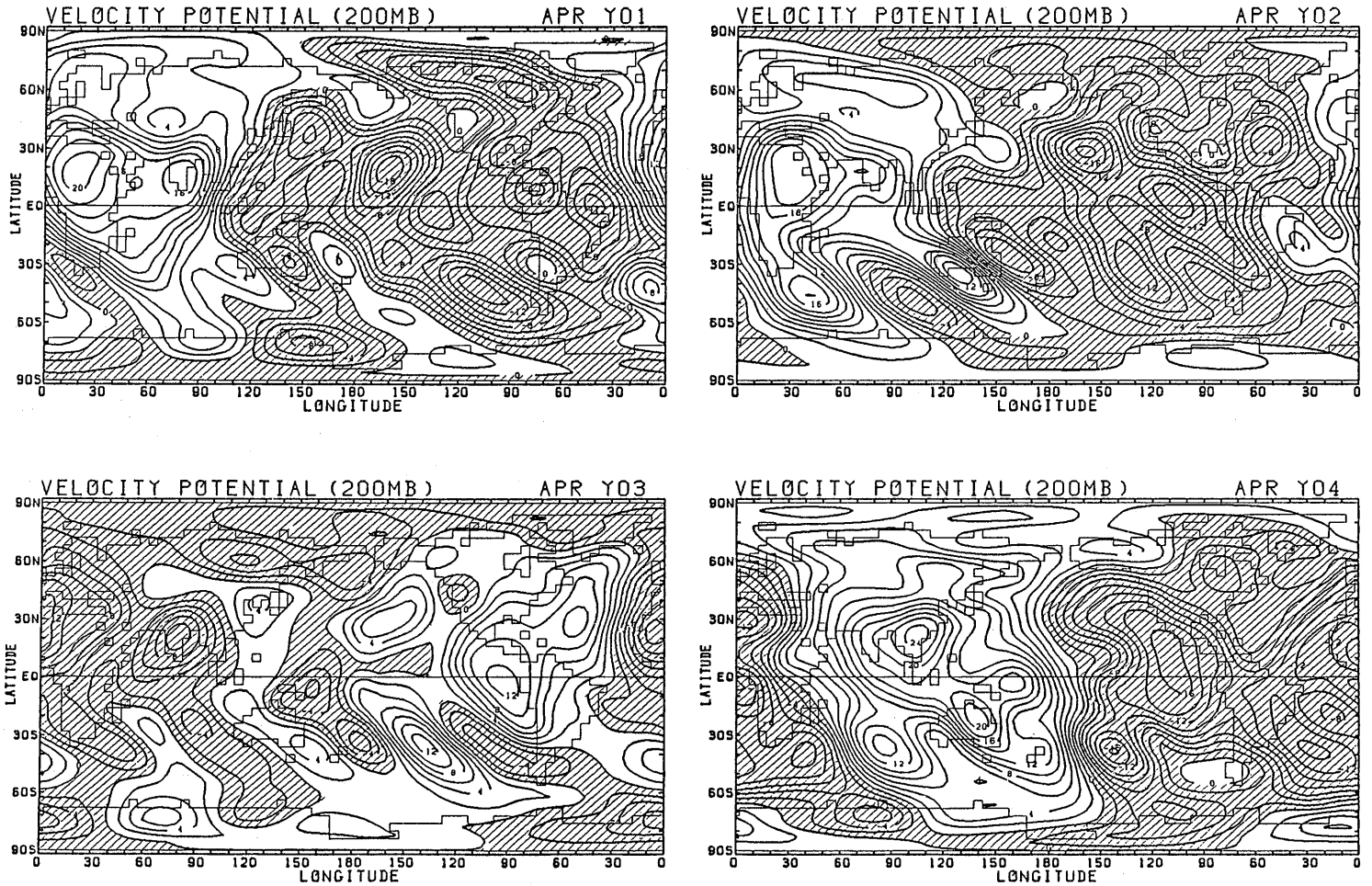


Fig. 2.14.2 Same as in Fig. 2.13.2 except for April of Y01, Y02, Y03 and Y04.

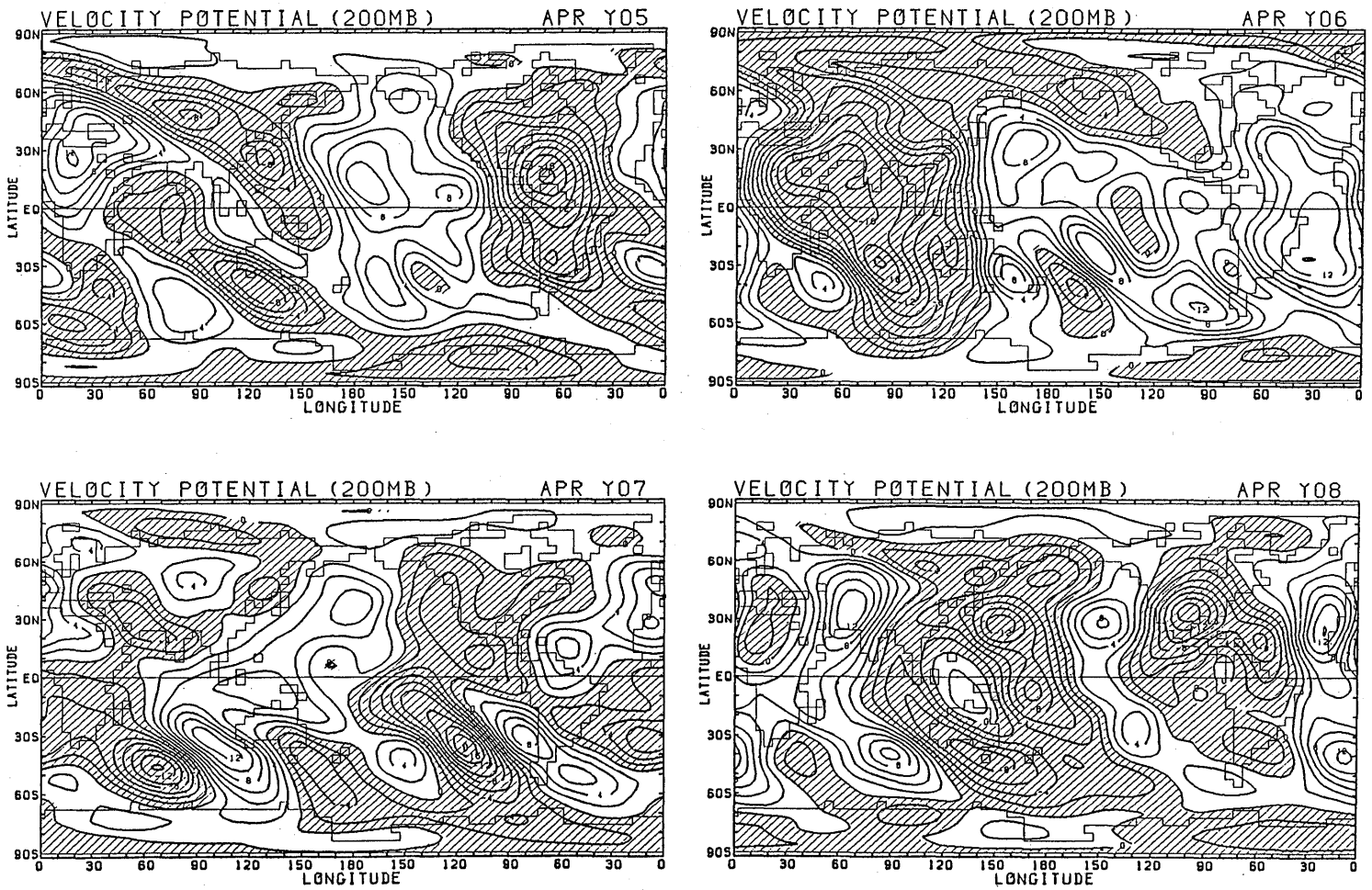


Fig. 2.14.3 Same as in Fig. 2.13.2 except for April of Y05, Y06, Y07 and Y08.

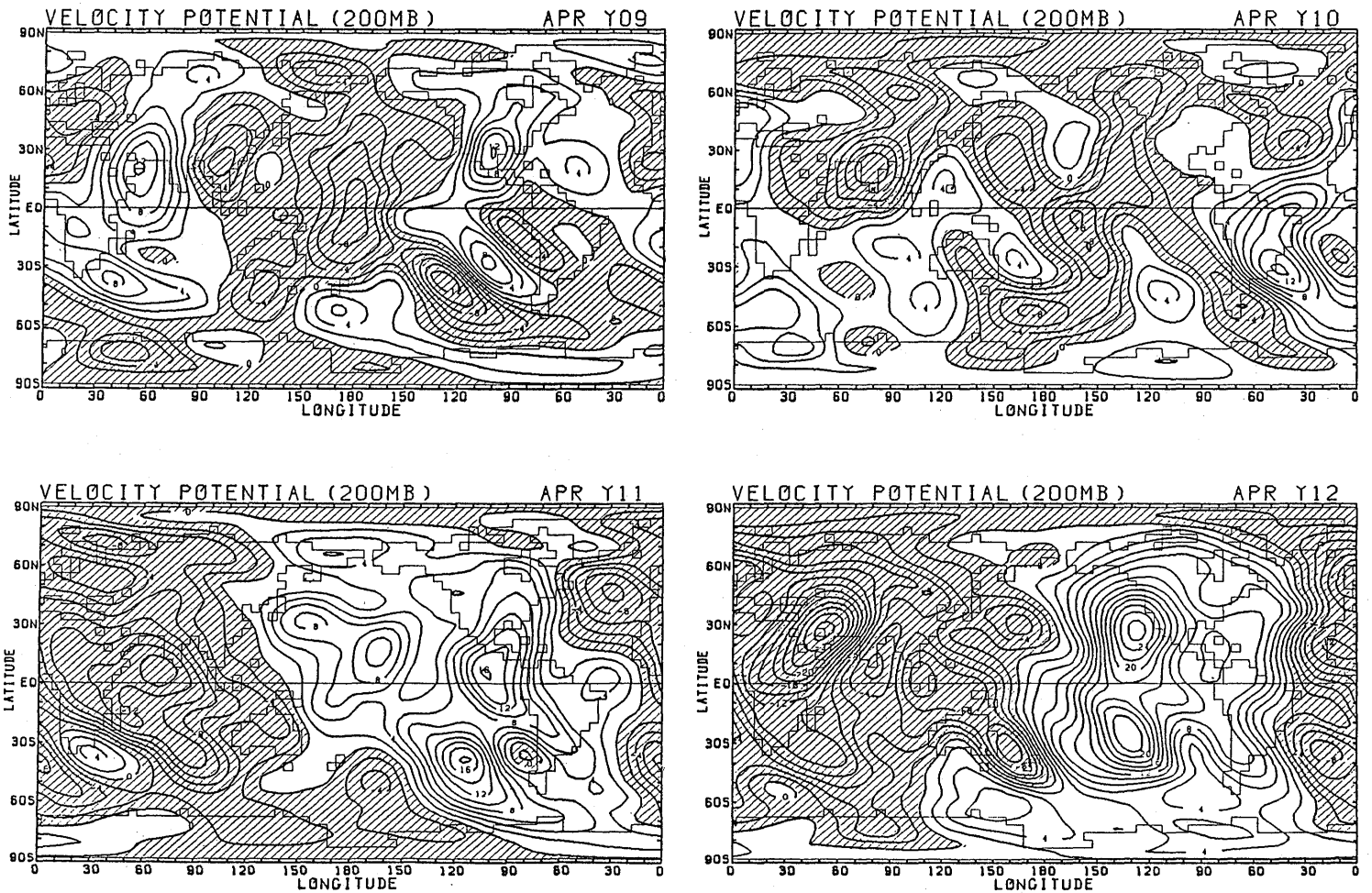


Fig. 2.14.4 Same as in Fig. 2.13.2 except for April of Y09, Y10, Y11 and Y12.

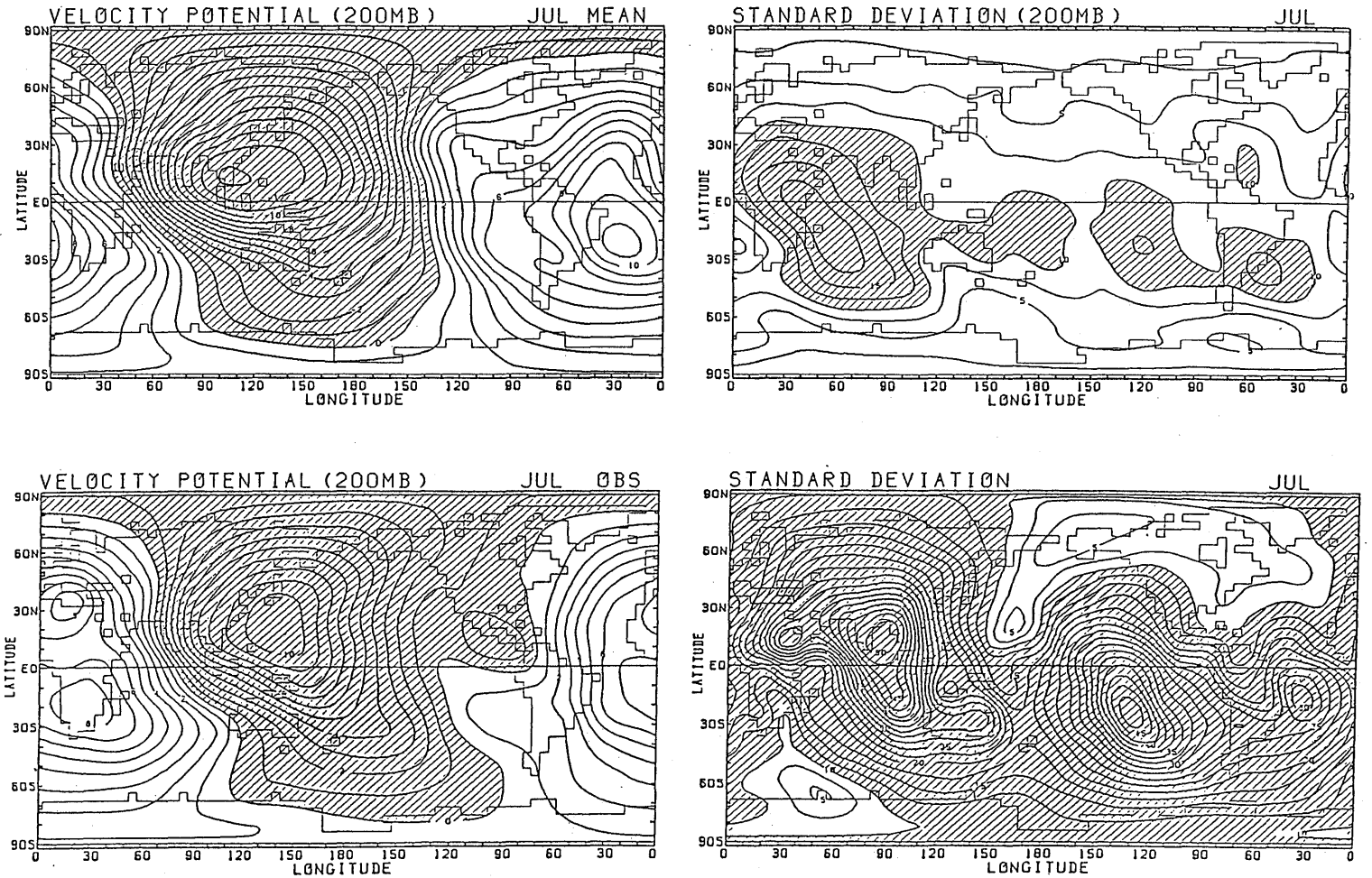


Fig. 2.15.1 Same as in Fig. 2.13.1 except for July.

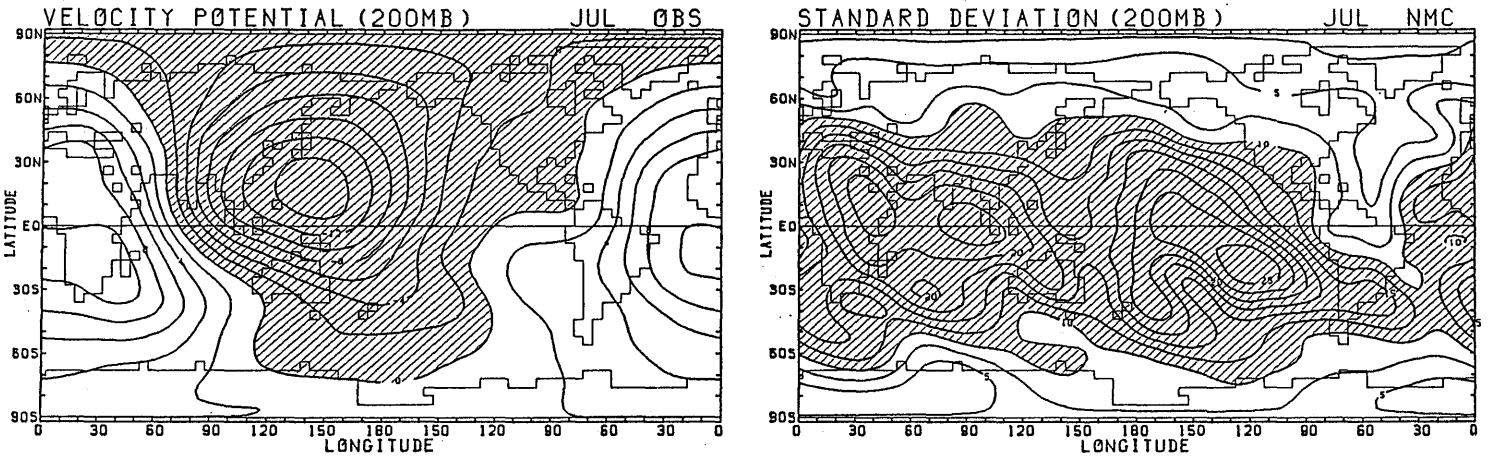


Fig. 2.15.1′ Ensemble average of the monthly mean velocity potential at 200 mb (upper left panel) and the standard deviation from the ensemble average (upper right panel) for July based on the analyzed data of the NMC for the period from 1979 to 1983. The contour intervals are the same as those in Fig. 2.13.1.

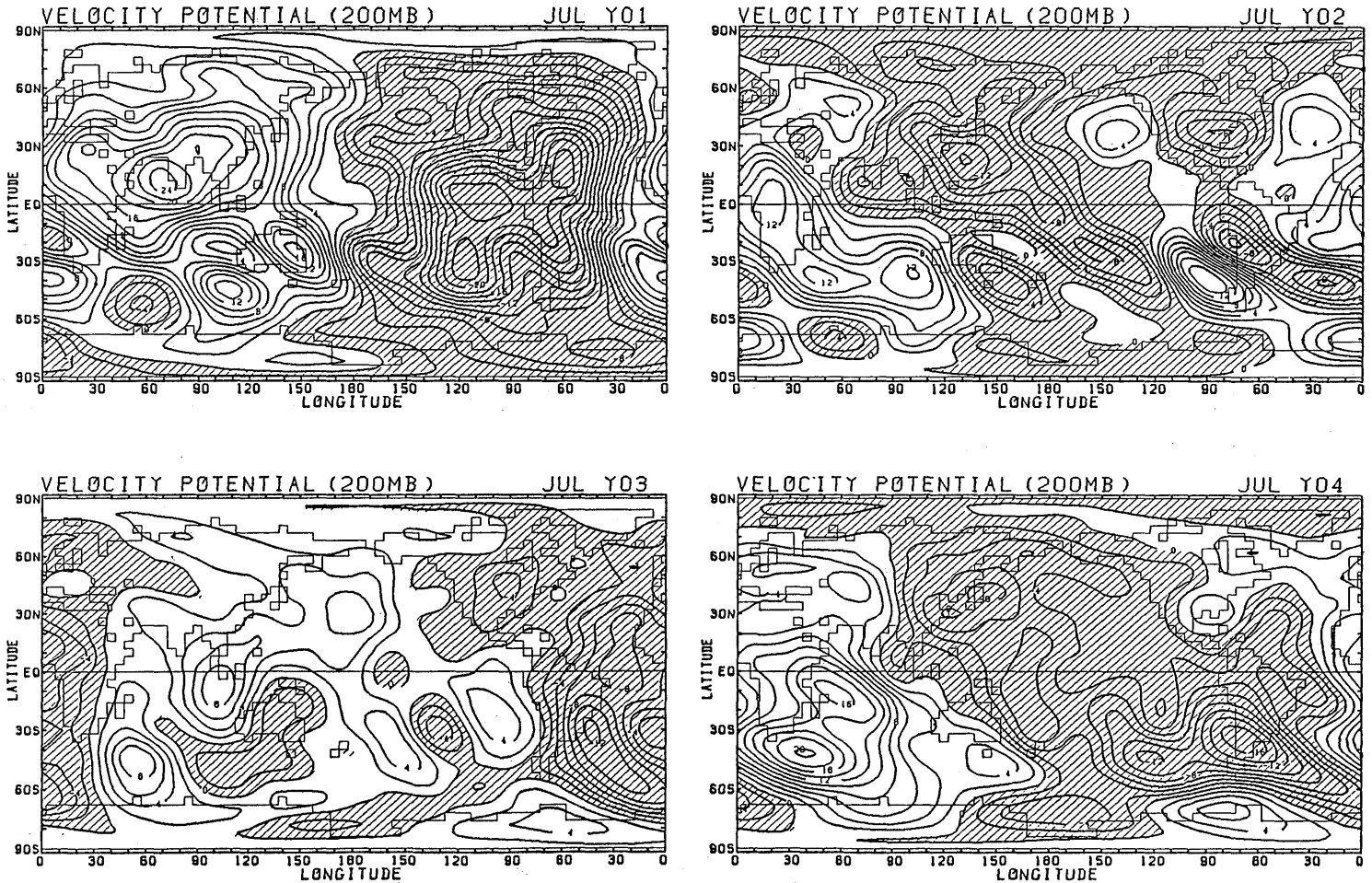


Fig. 2.15.2 Same as in Fig. 2.13.2 except for July of Y01, Y02, Y03 and Y04.

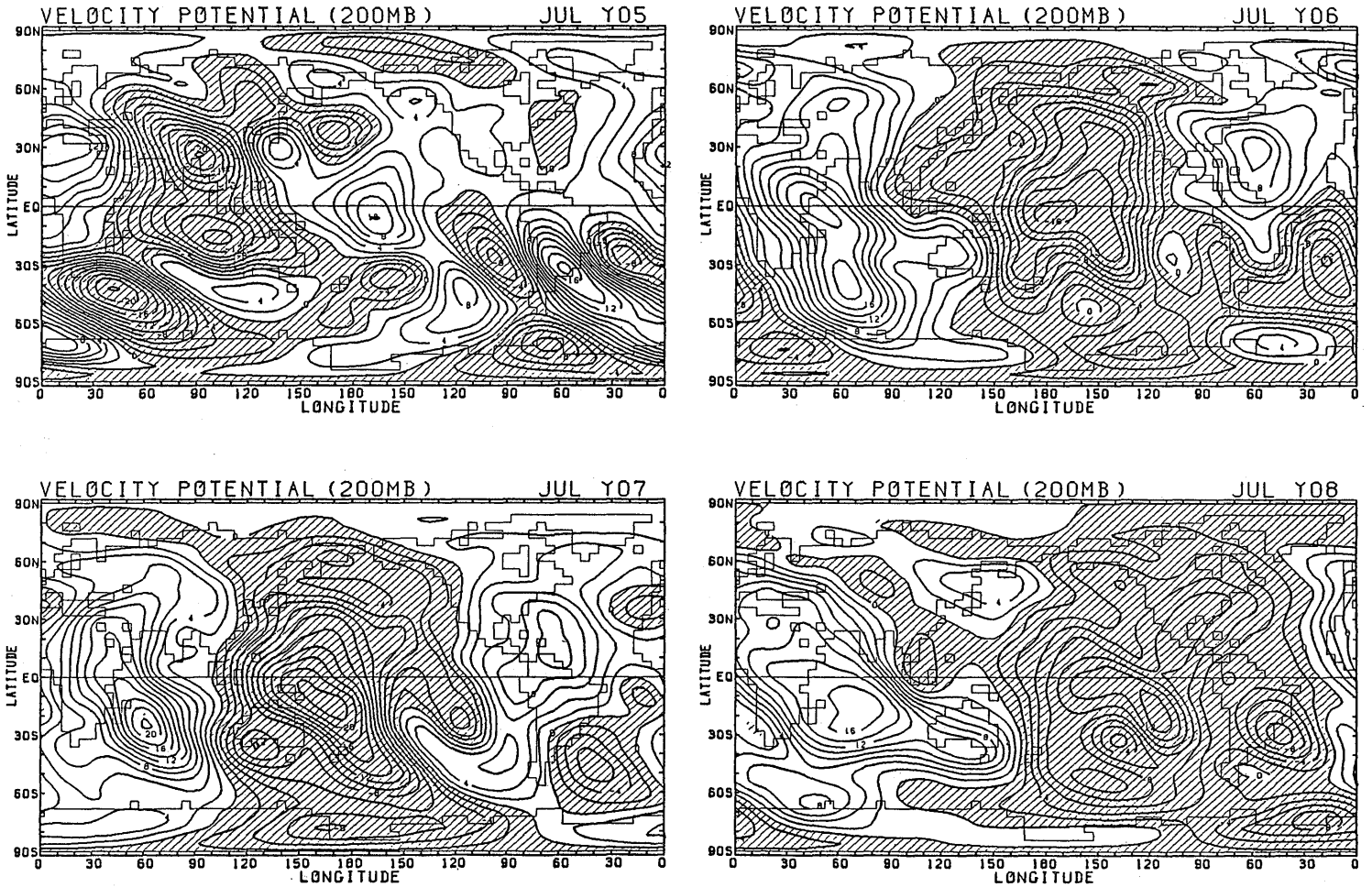


Fig. 2.15.3 Same as in Fig. 2.13.2 except for July of Y05, Y06, Y07 and Y08.

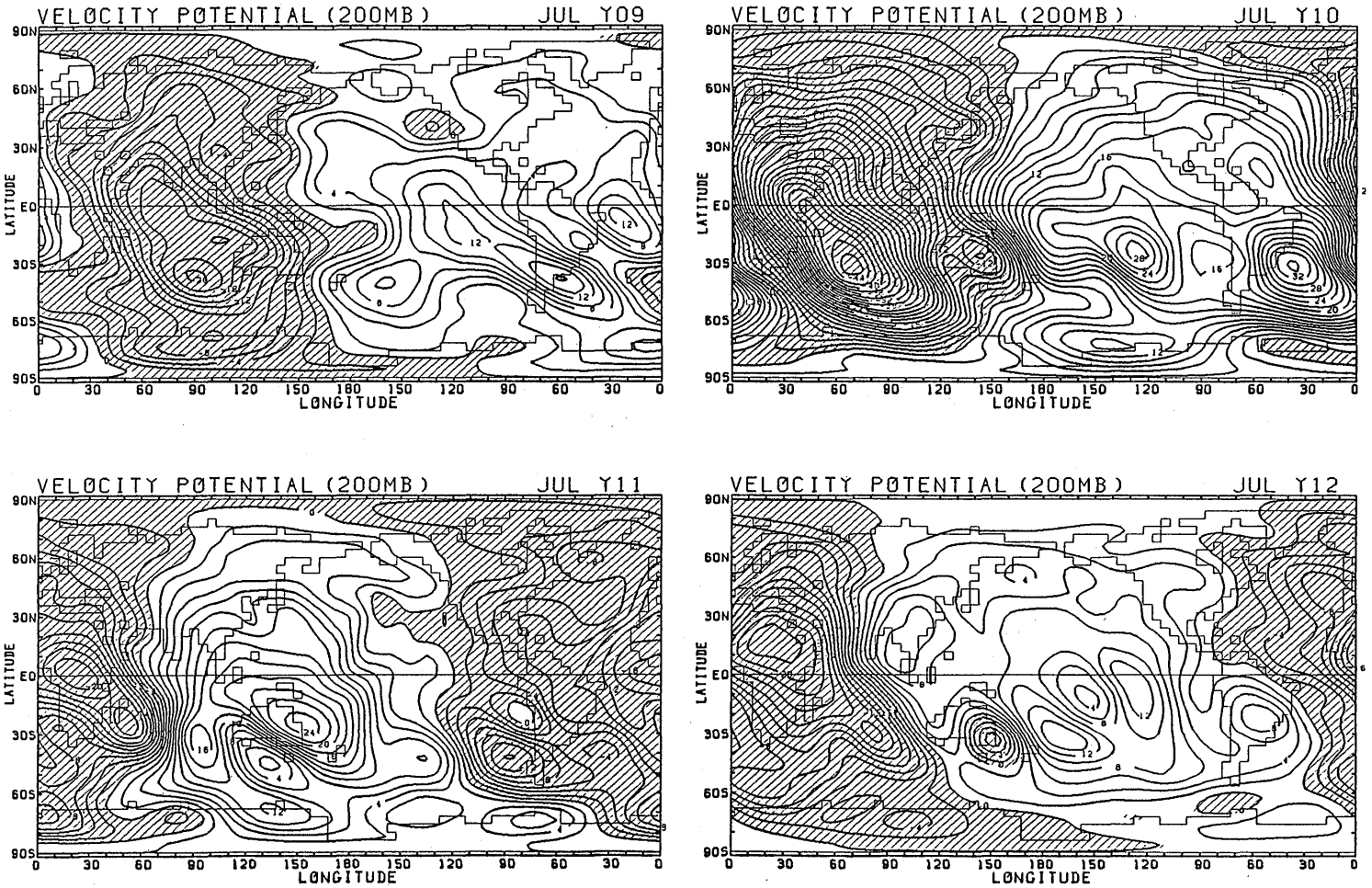


Fig. 2.15.4 Same as in Fig. 2.13.2 except for July of Y09, Y10, Y11 and Y12.

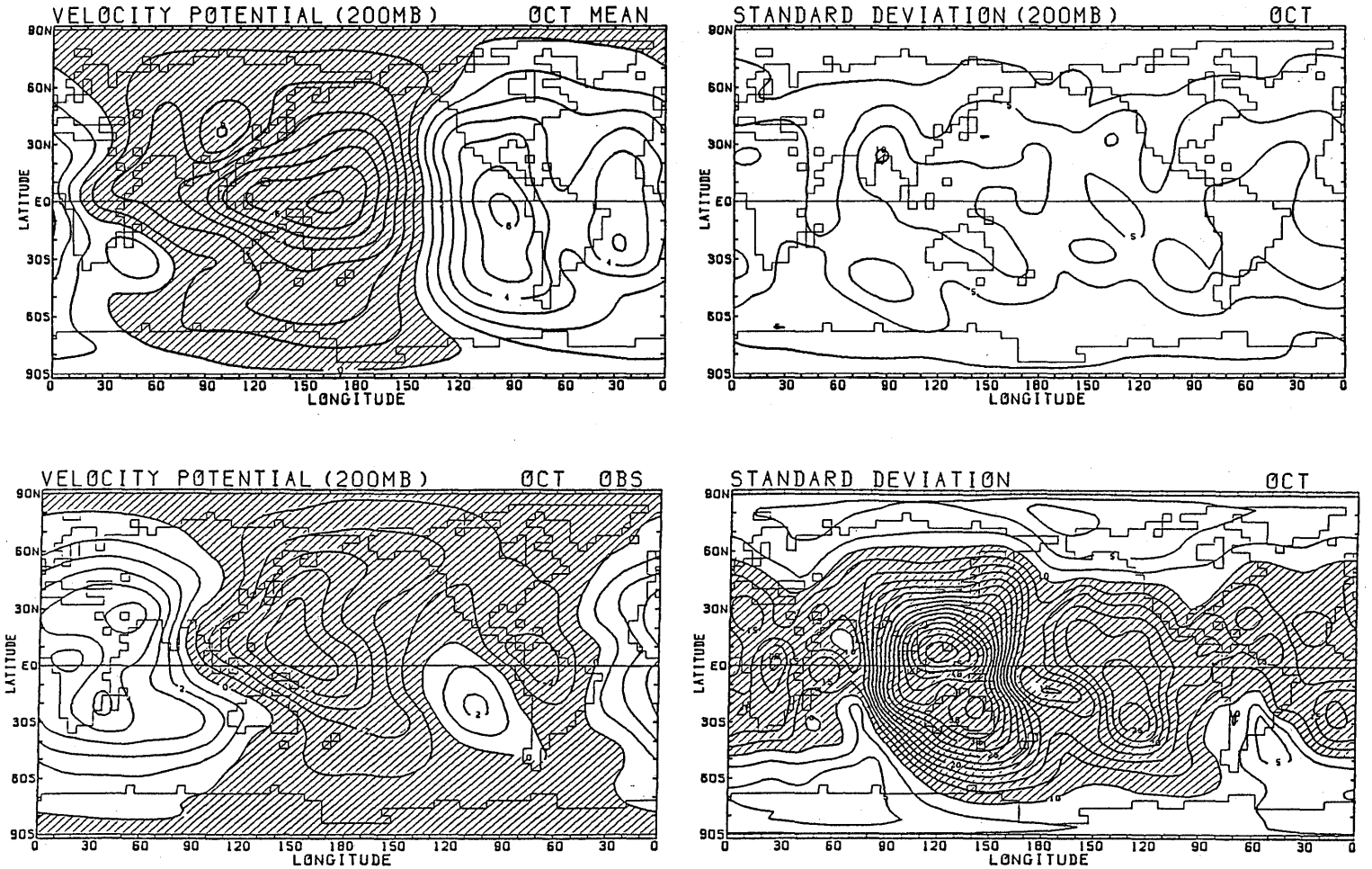


Fig. 2.16.1 Same as in Fig. 2.13.1 except for October.

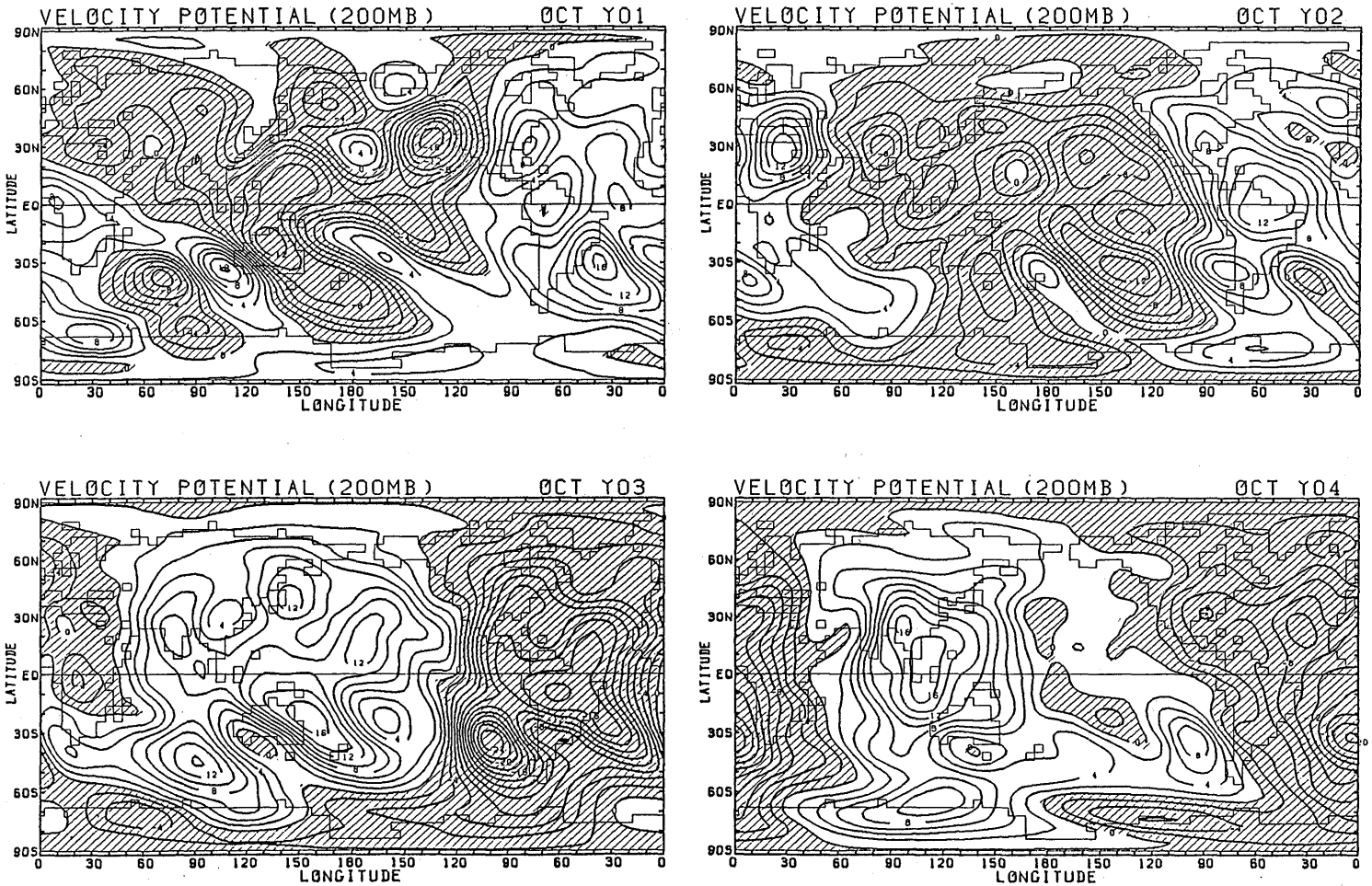


Fig. 2.16.2 Same as in Fig. 2.13.2 except for October of Y01, Y02, Y03 and Y04.

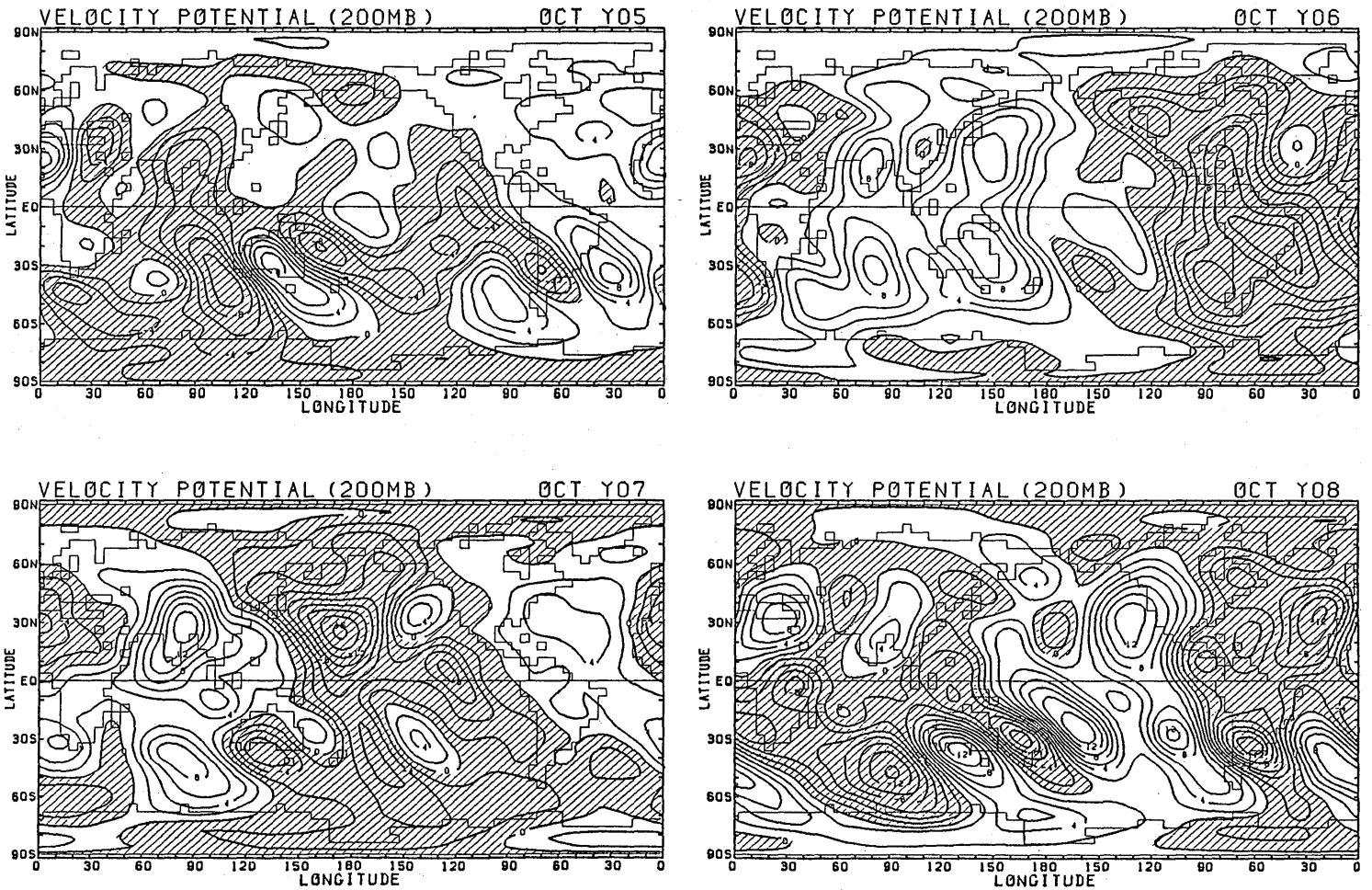


Fig. 2.16.3 Same as in Fig. 2.13.2 except for October of Y05, Y06, Y07 and Y08.

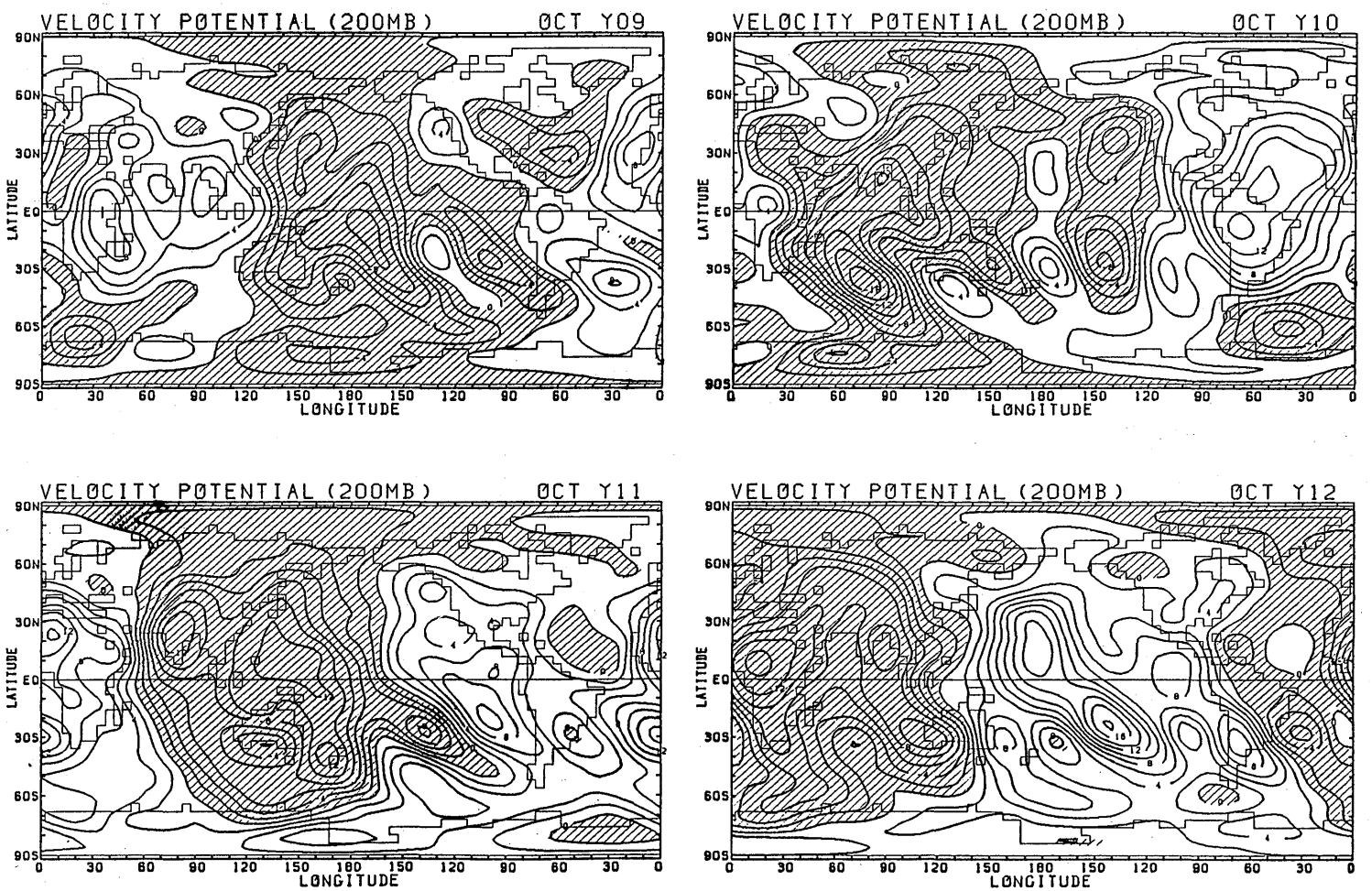


Fig. 2.16.4 Same as in Fig. 2.13.2 except for October of Y09, Y10, Y11 and Y12.

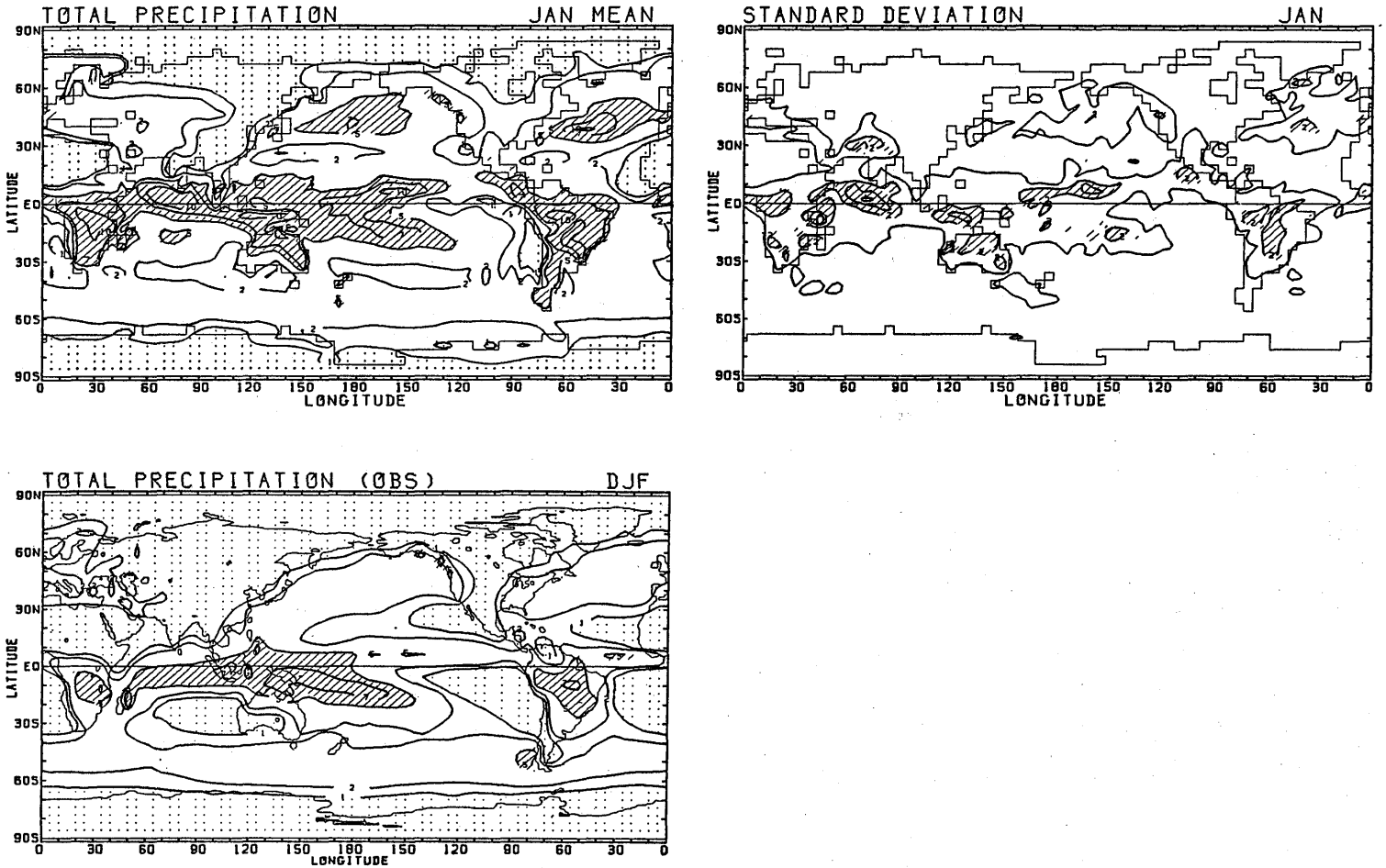


Fig. 2.17.1 Ensemble average of the monthly mean precipitation (upper left panel) and the standard deviation from the ensemble average (upper right panel) for model January in mm day^{-1}. The lower left panel shows the climate values for December to February compiled by Schutz and Gates (1971). In the lefthand panels, contours are drawn for 1, 2, 5, 7.5 and 10 mm day^{-1}. The area over 5 mm day^{-1} is shaded, that below 1 mm day^{-1} is dotted. The contour interval of the righthand panel is 1 mm day^{-1} and the area over 2 mm day^{-1} is shaded.

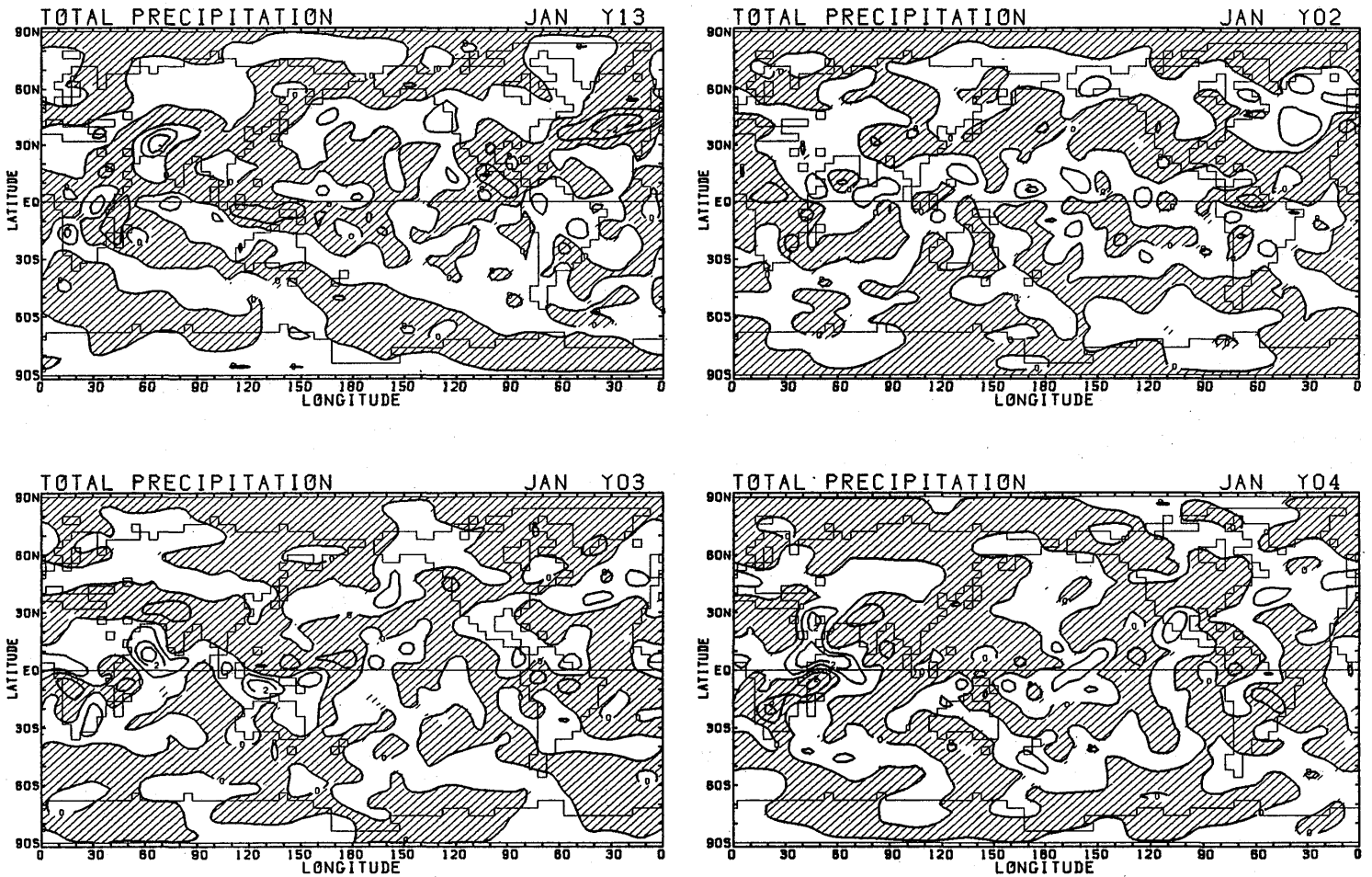


Fig. 2.17.2 Deviation of the monthly mean precipitation in January of Y13, Y02, Y03 and Y04 from the ensemble average shown in the upper left panel of Fig. 2.17.1. The contour interval is 1 mm day^{-1} and the negative area is shaded.

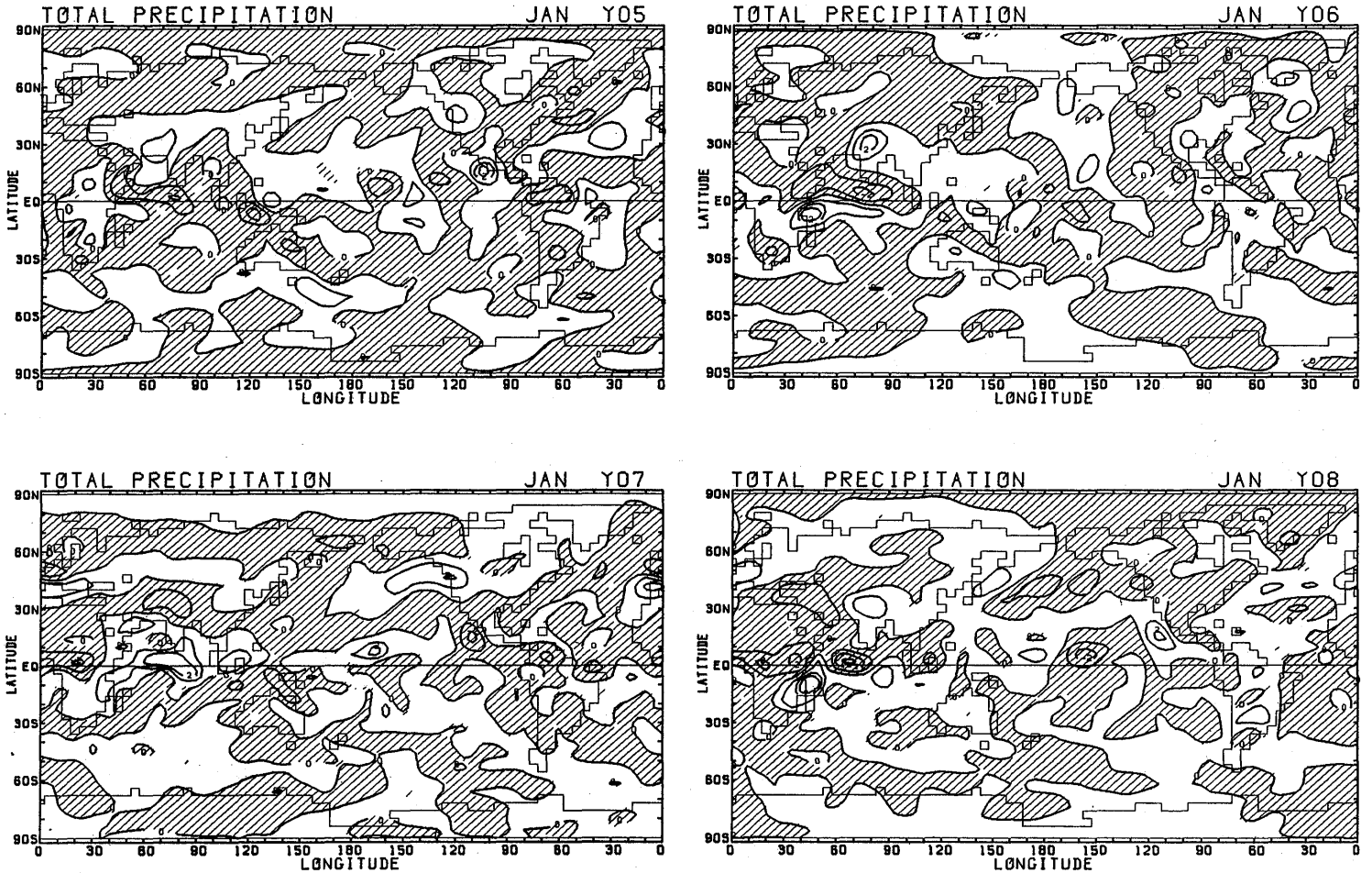


Fig. 2.17.3 Same as in Fig. 2.17.2 except for Y05, Y06, Y07 and Y08.

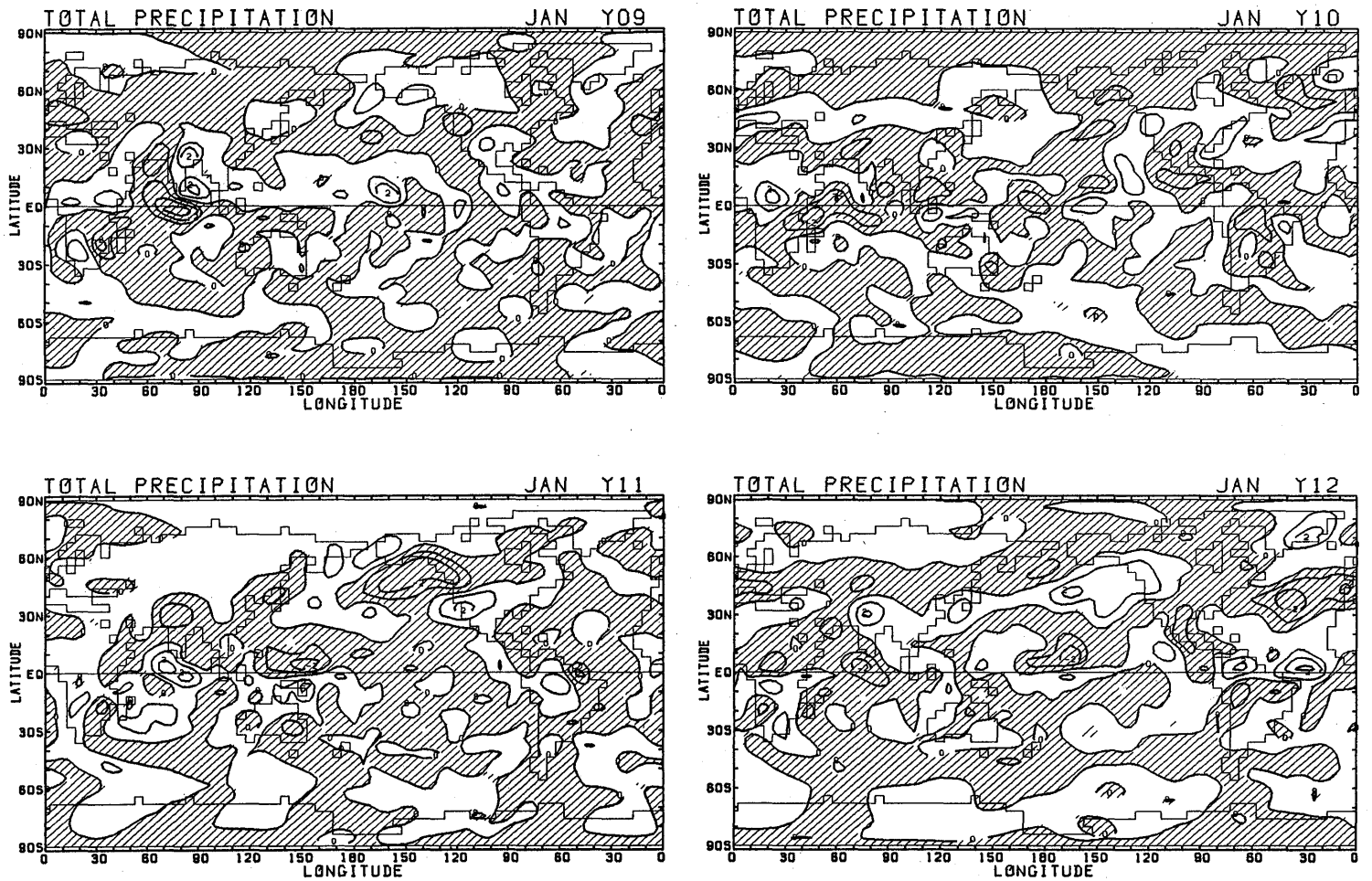
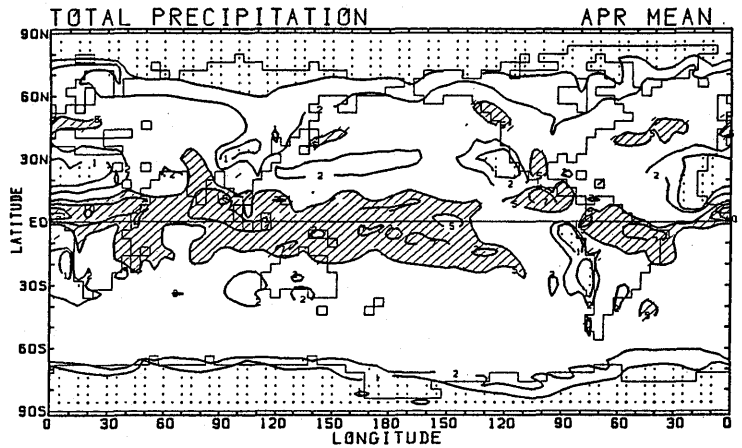
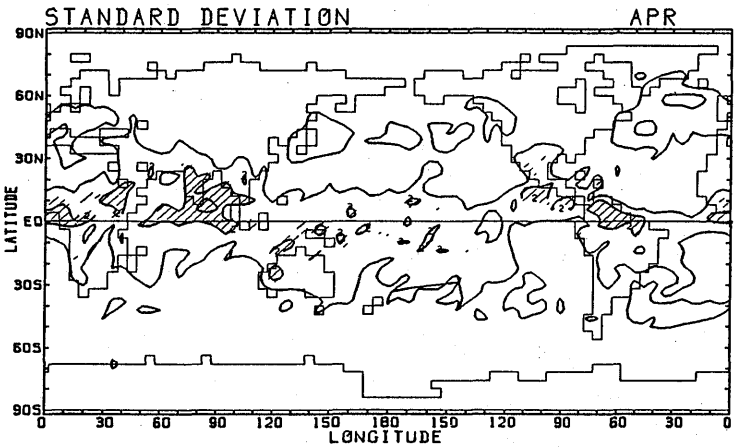


Fig. 2.17.4 Same as in Fig. 2.17.2 except for Y09, Y10, Y11 and Y12.





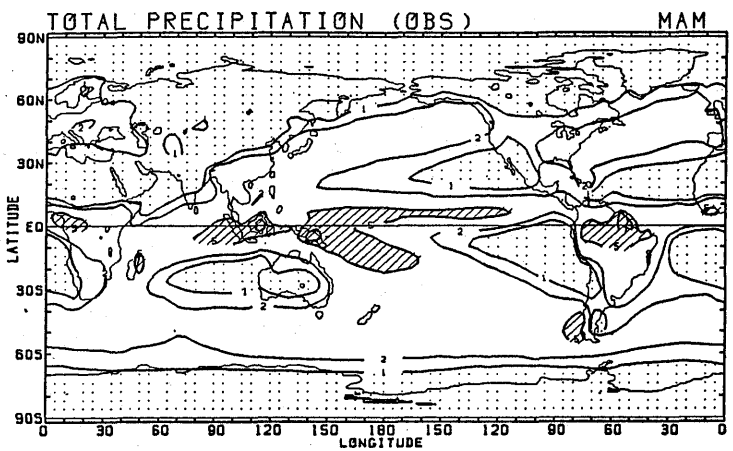


Fig. 2.18.1 Same as in Fig. 2.17.1 except for April. The climate values are for March to May compiled by Schutz and Gates (1973).

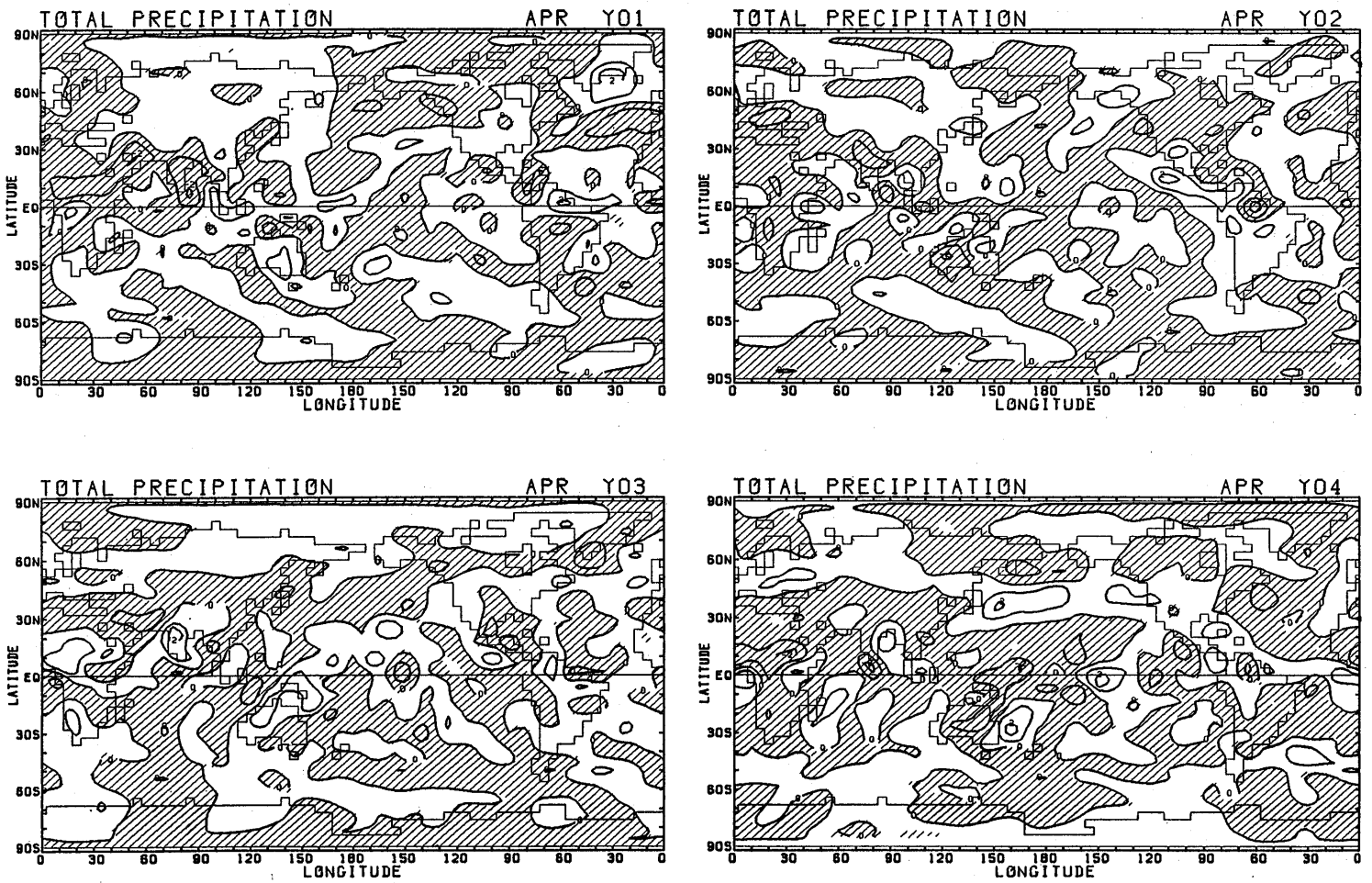


Fig. 2.18.2 Same as in Fig. 2.17.2 except for April of Y01, Y02, Y03 and Y04.

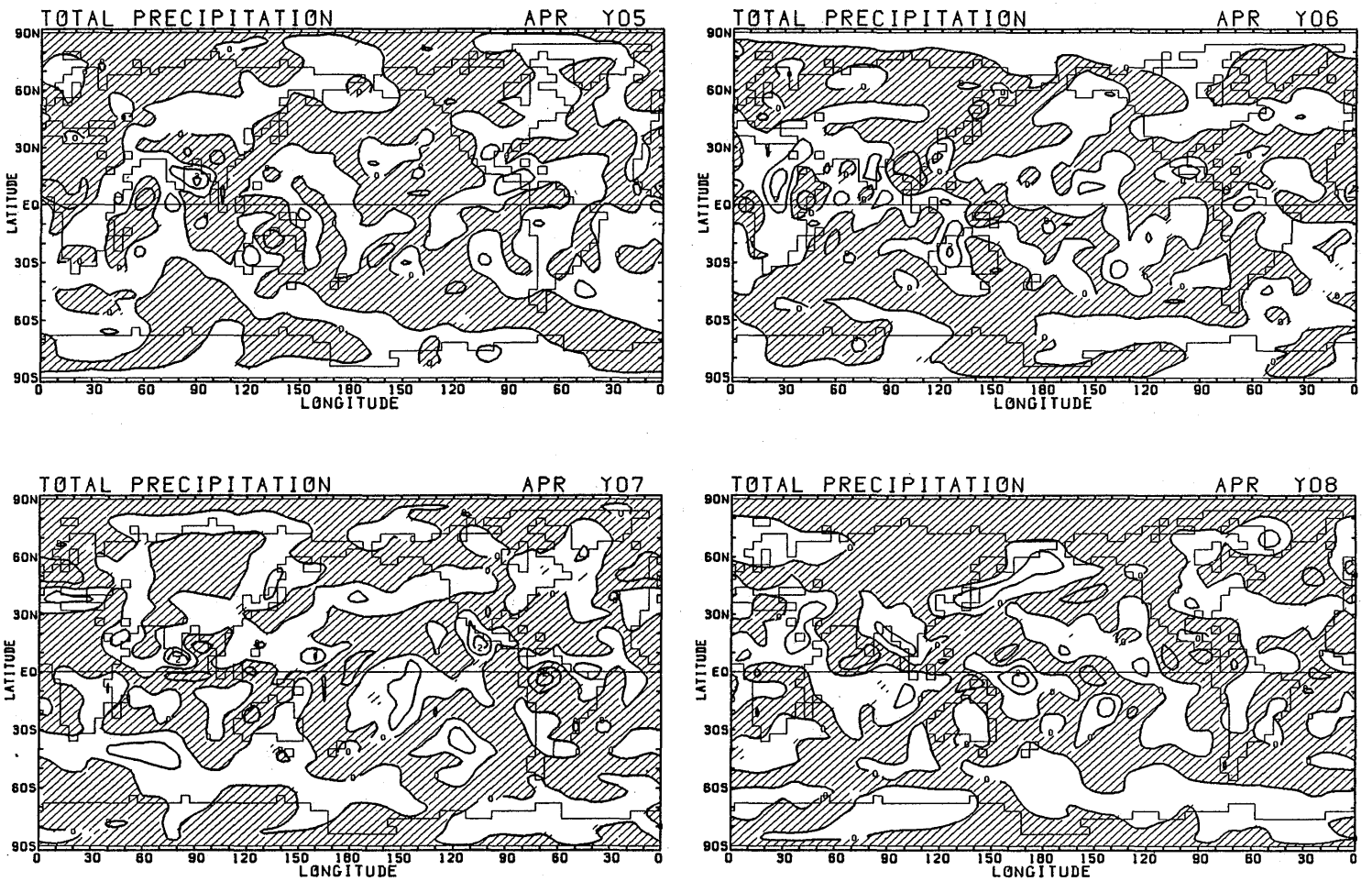


Fig. 2.18.3 Same as in Fig. 2.17.2 except for April of Y05, Y06, Y07 and Y08.

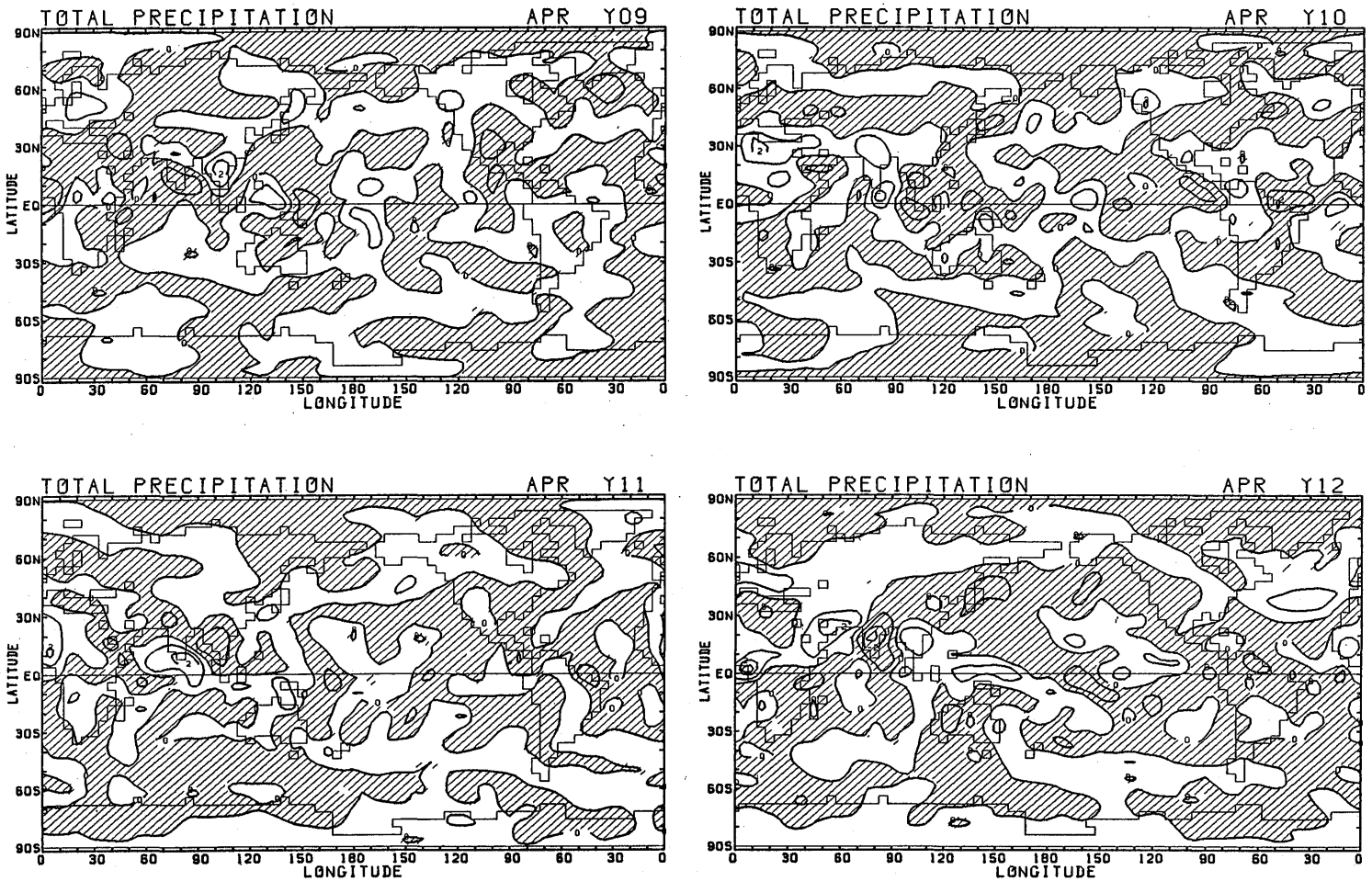


Fig. 2.18.4 Same as in Fig. 2.17.2 except for April of Y09, Y10, Y11 and Y12.

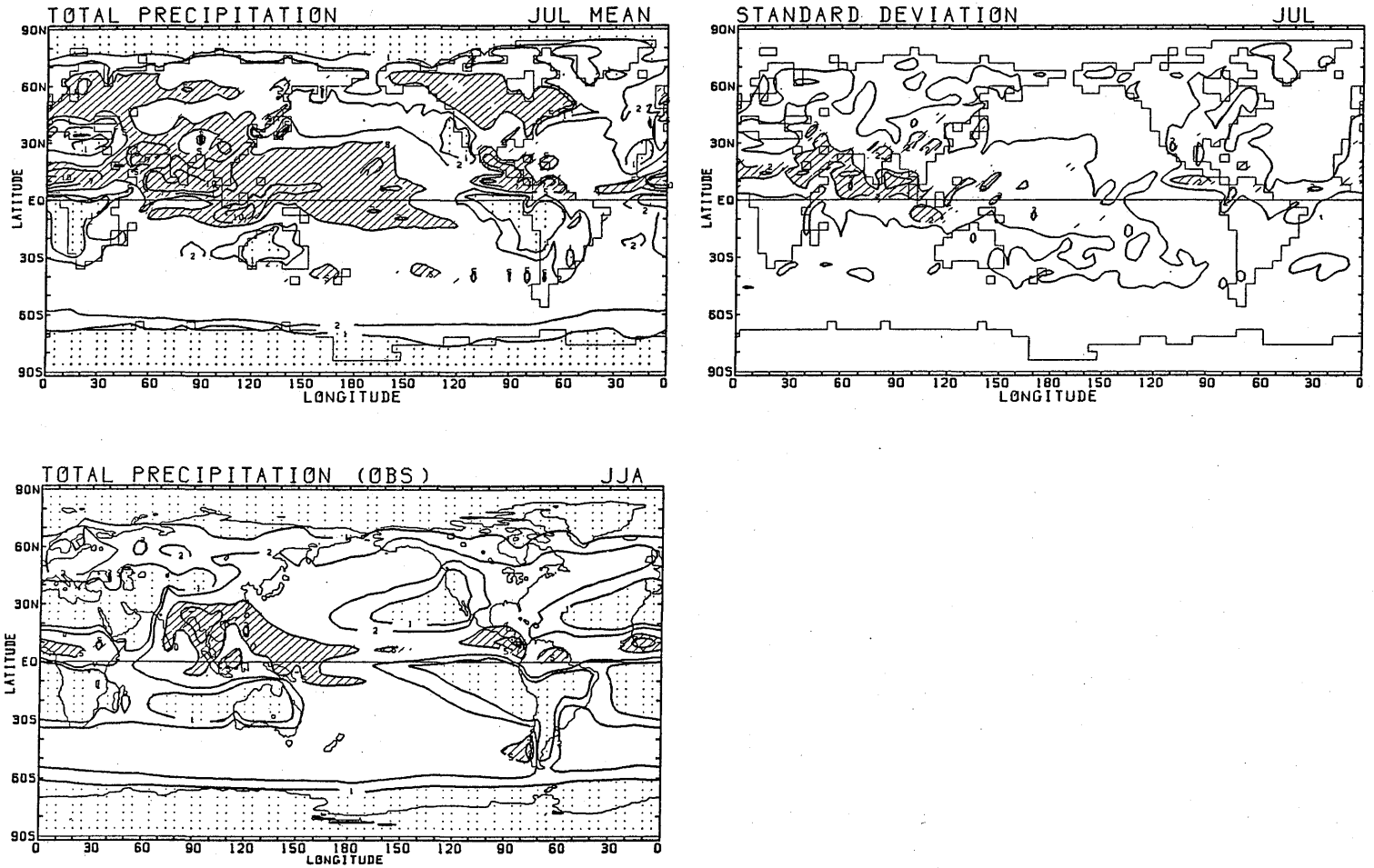


Fig. 2.19.1 Same as in Fig. 2.17.1 except for July. The climate values are for June to August compiled by Schutz and Gates (1972).

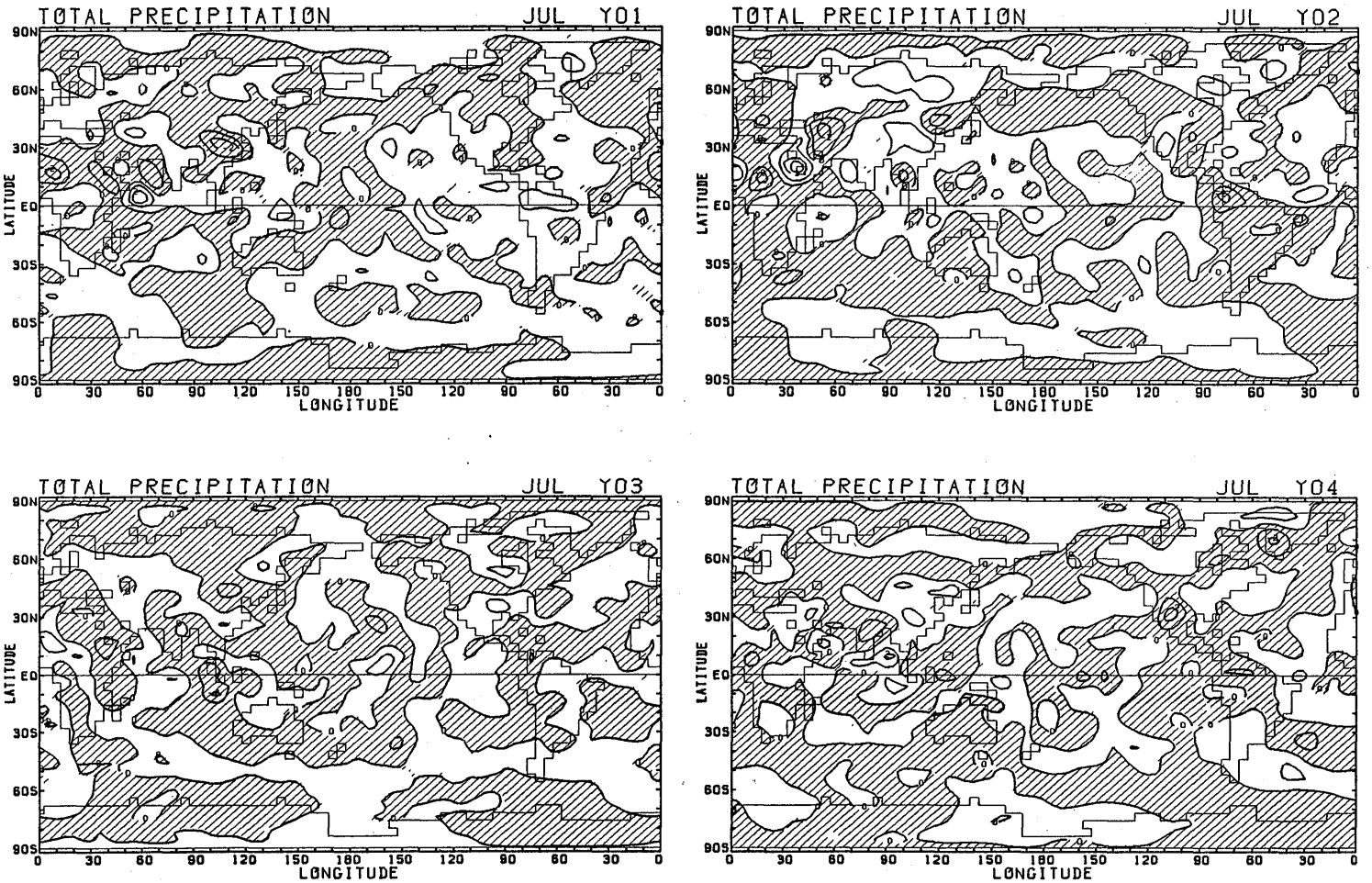


Fig. 2.19.2 Same as in Fig. 2.17.2 except for July of Y01, Y02, Y03 and Y04.

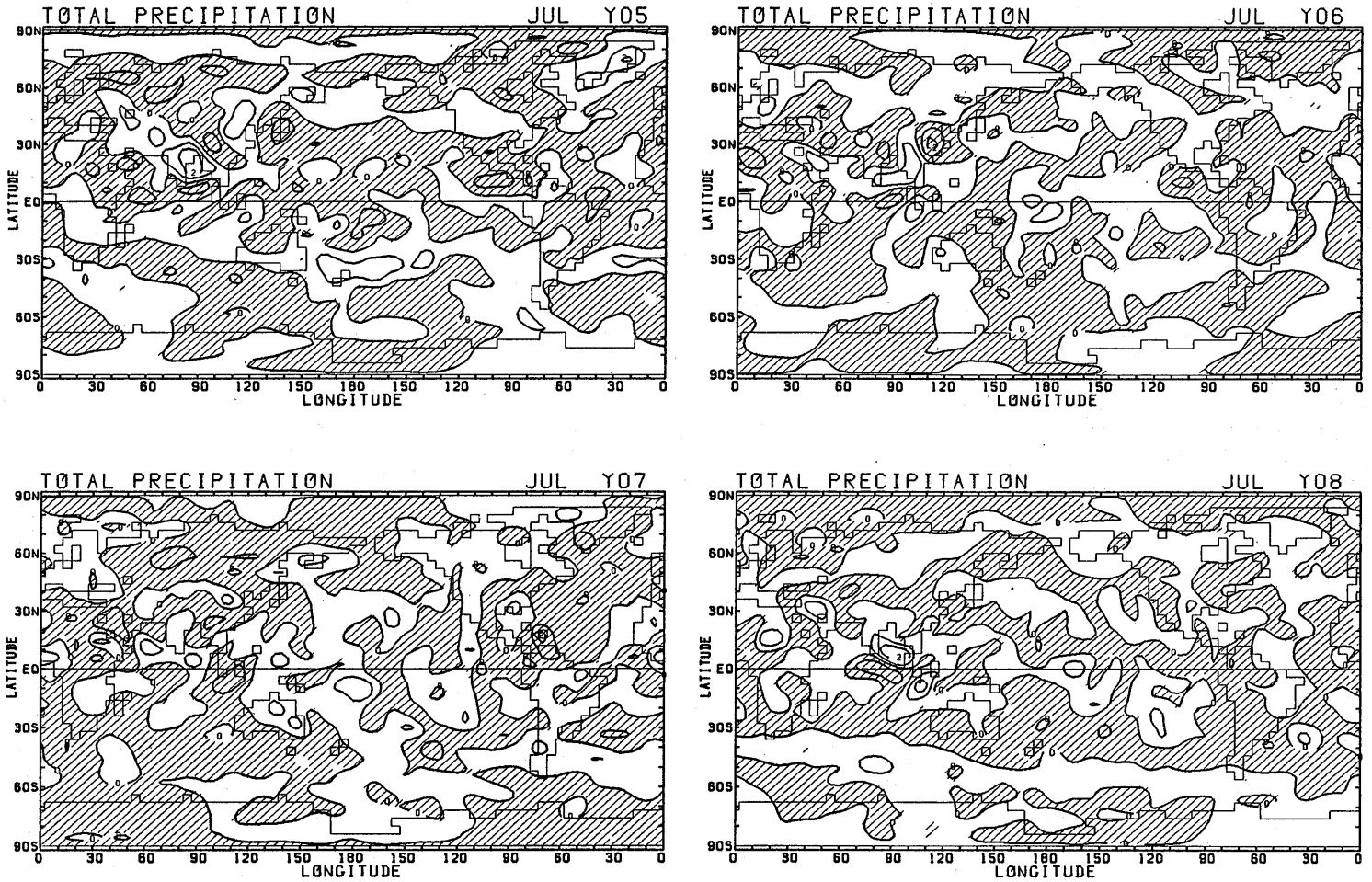


Fig. 2.19.3 Same as in Fig. 2.17.2 except for July of Y05, Y06, Y07 and Y08.

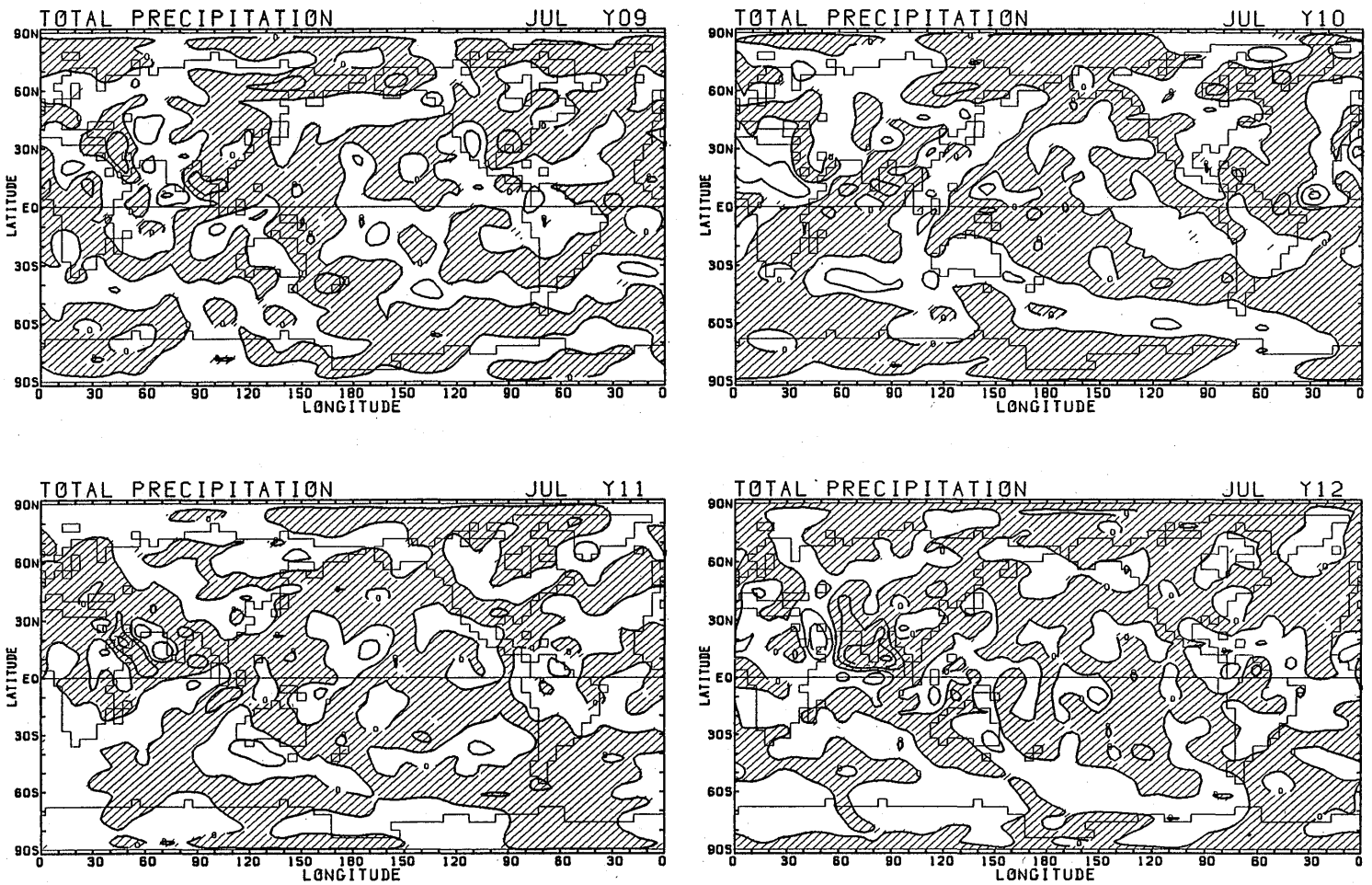


Fig. 2.19.4 Same as in Fig. 2.17.2 except for July of Y09, Y10, Y11 and Y12.

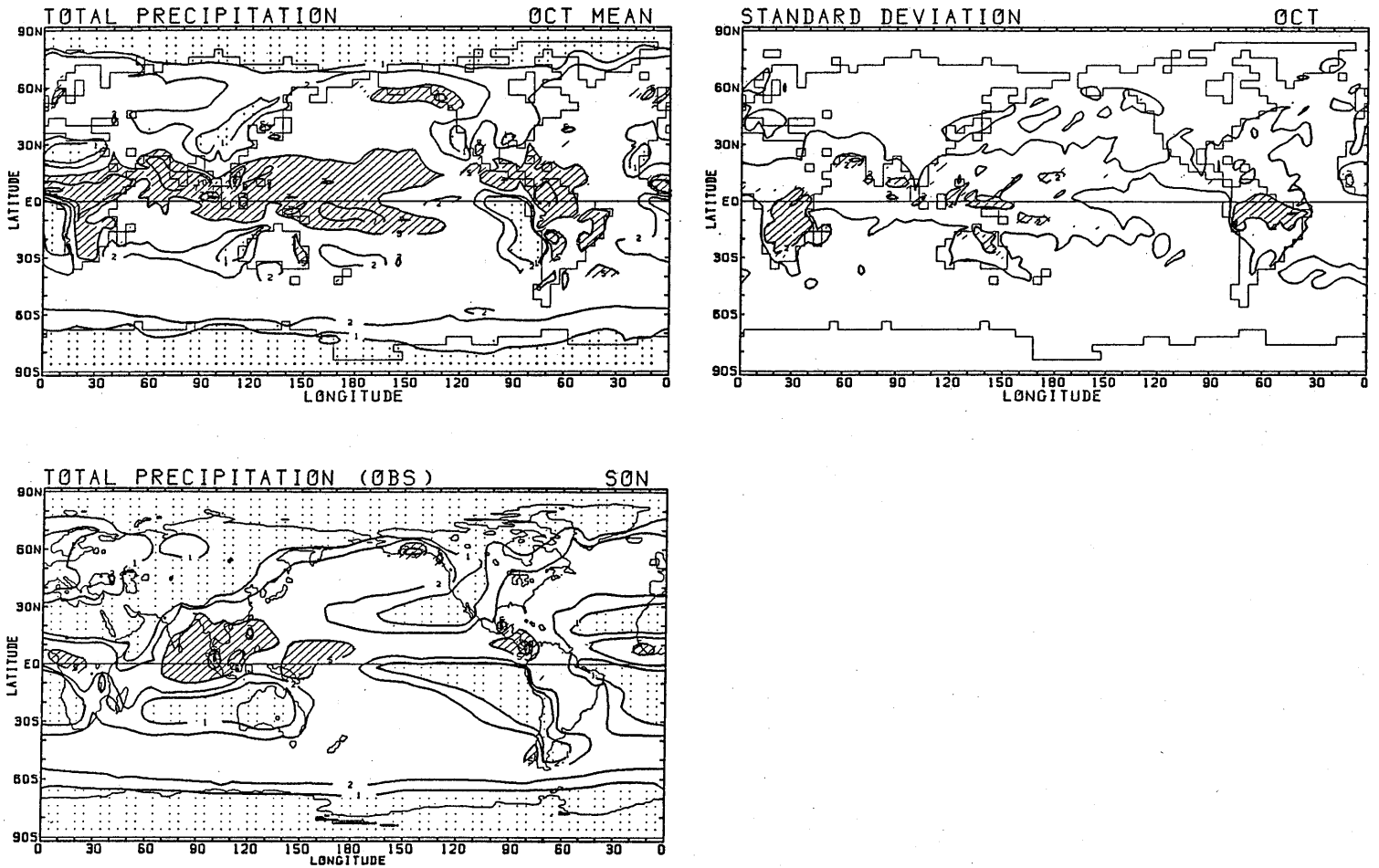


Fig. 2.20.1 Same as in Fig. 2.17.1 except for October. The climate values are for September to November compiled by Schutz and Gates (1974).

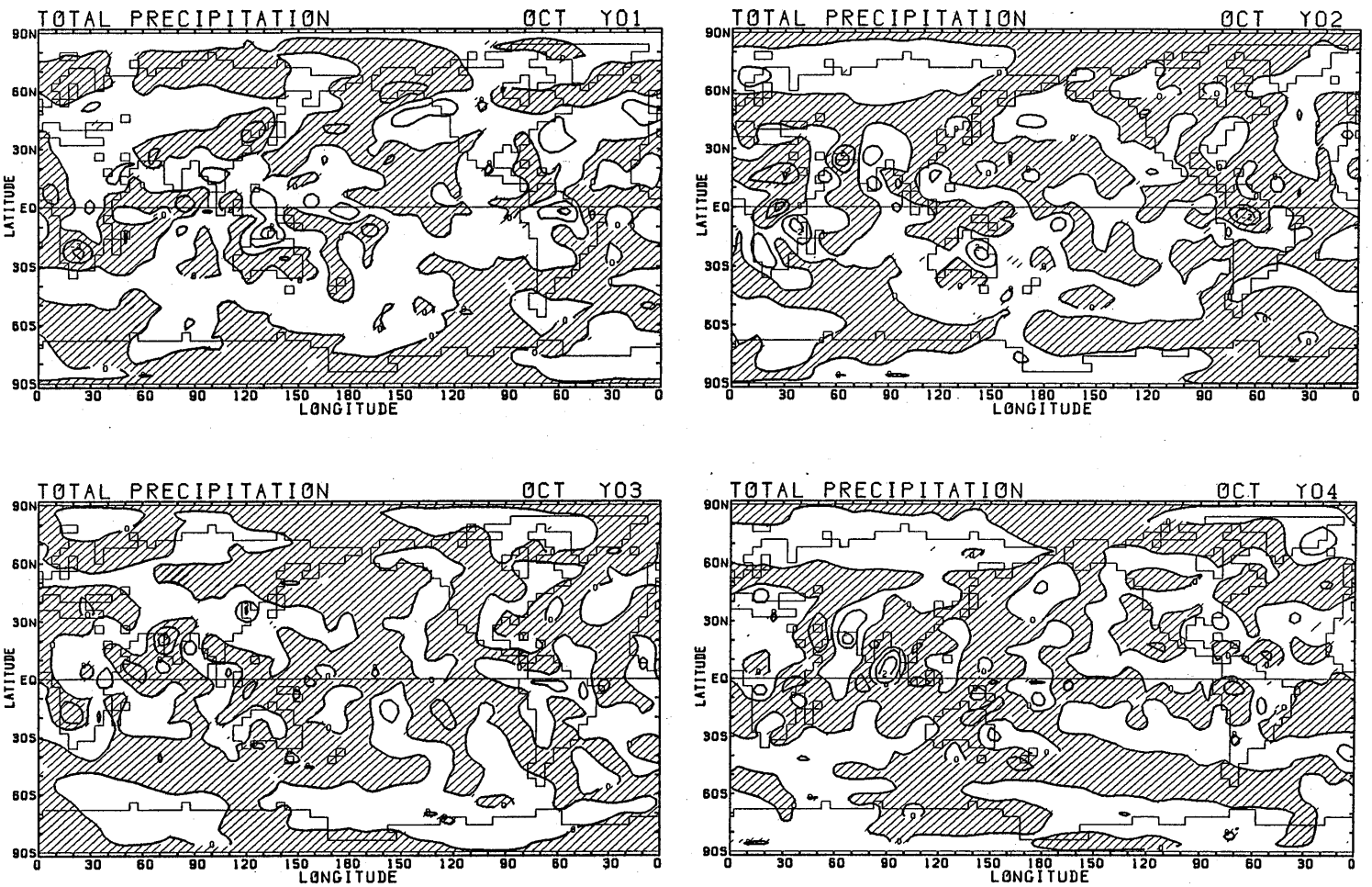


Fig. 2.20.2 Same as in Fig. 2.17.2 except for October of Y01, Y02, Y03 and Y04.

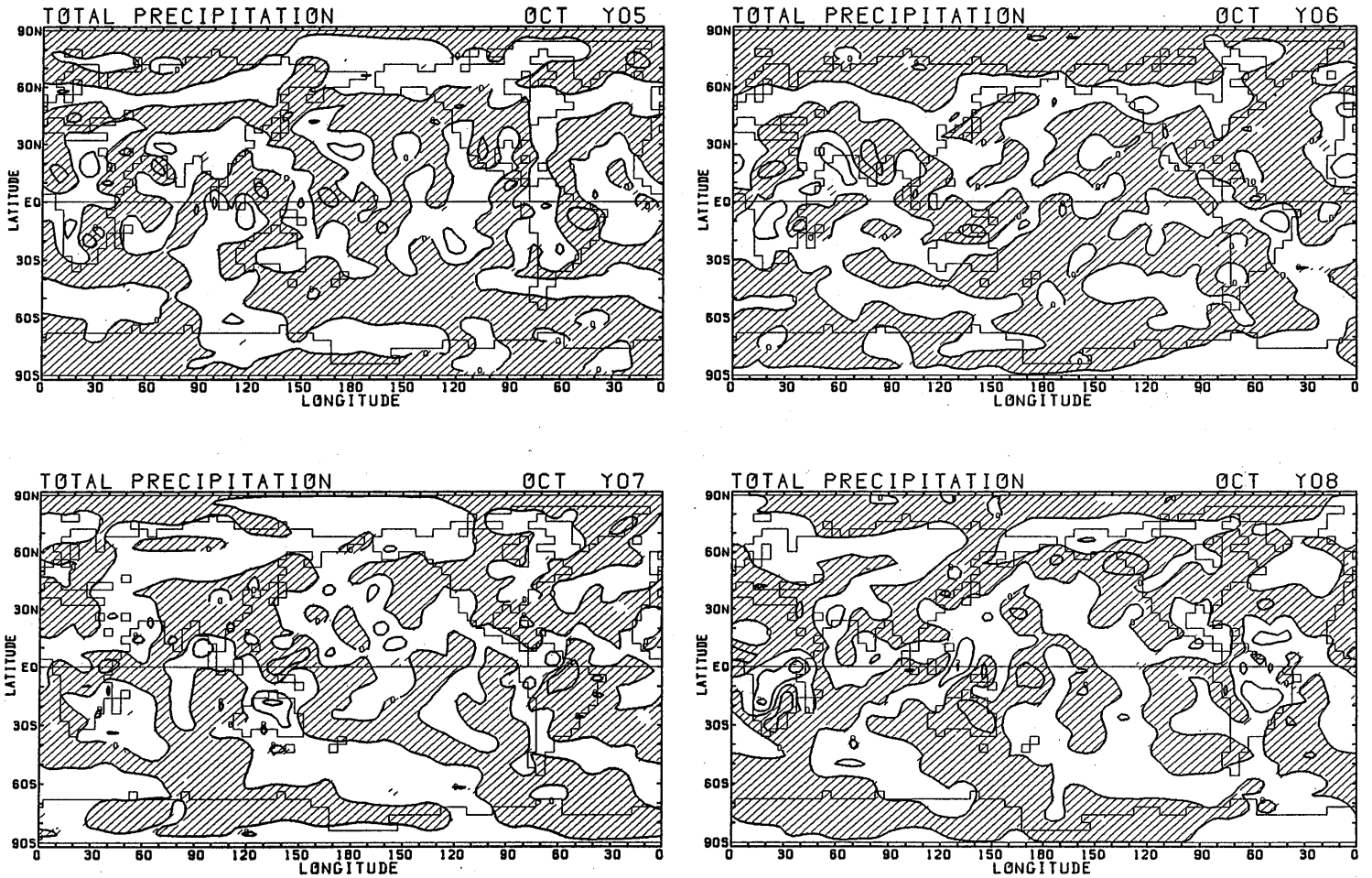


Fig. 2.20.3 Same as in Fig. 2.17.2 except for October of Y05, Y06, Y07 and Y08.

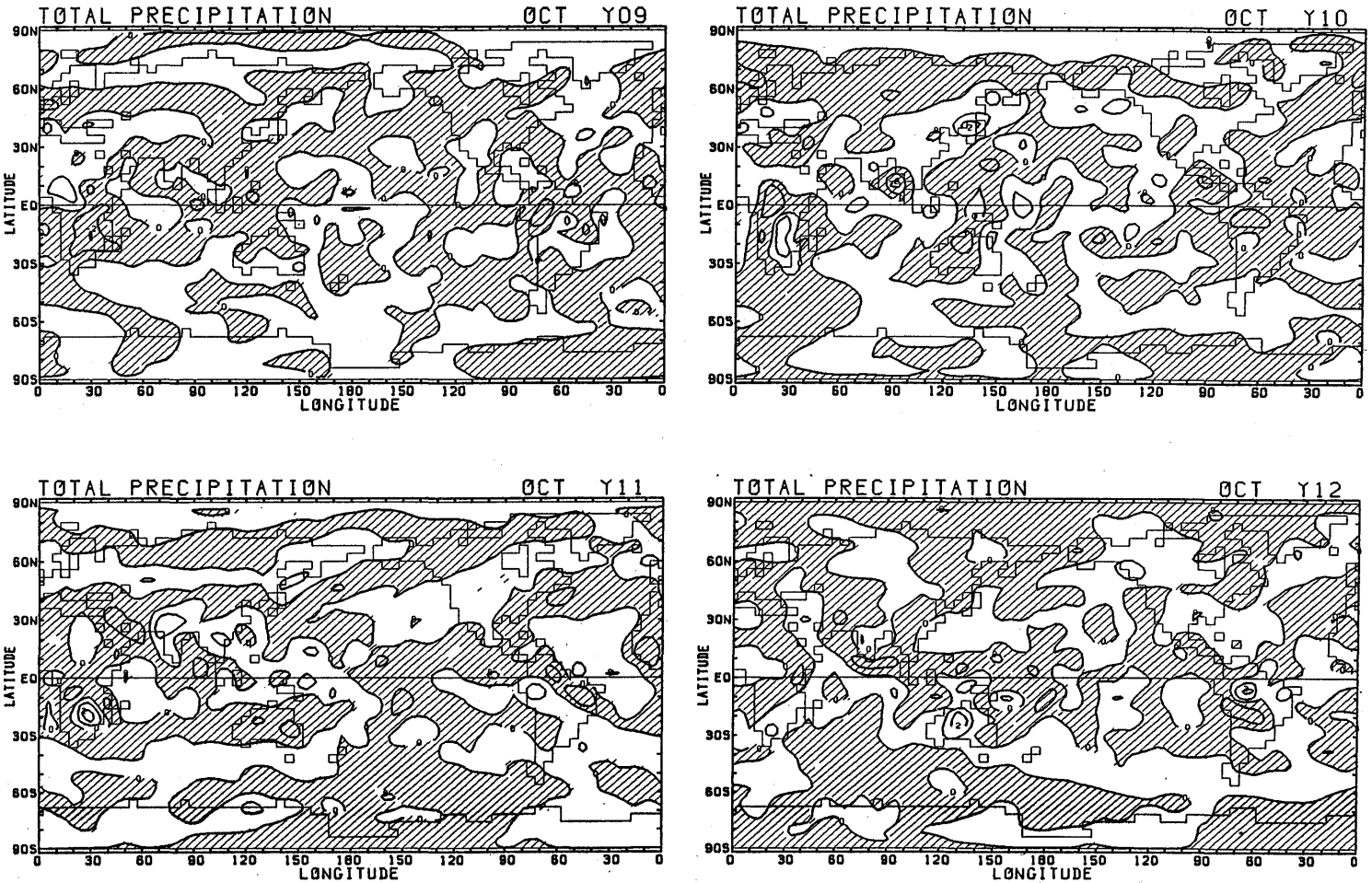


Fig. 2.20.4 Same as in Fig. 2.17.2 except for October of Y09, Y10, Y11 and Y12.