A) Additional profile comparisons

Fig. S1 provides CO profiles for the regions defined in Fig. 3 which are not included in Fig. 4.

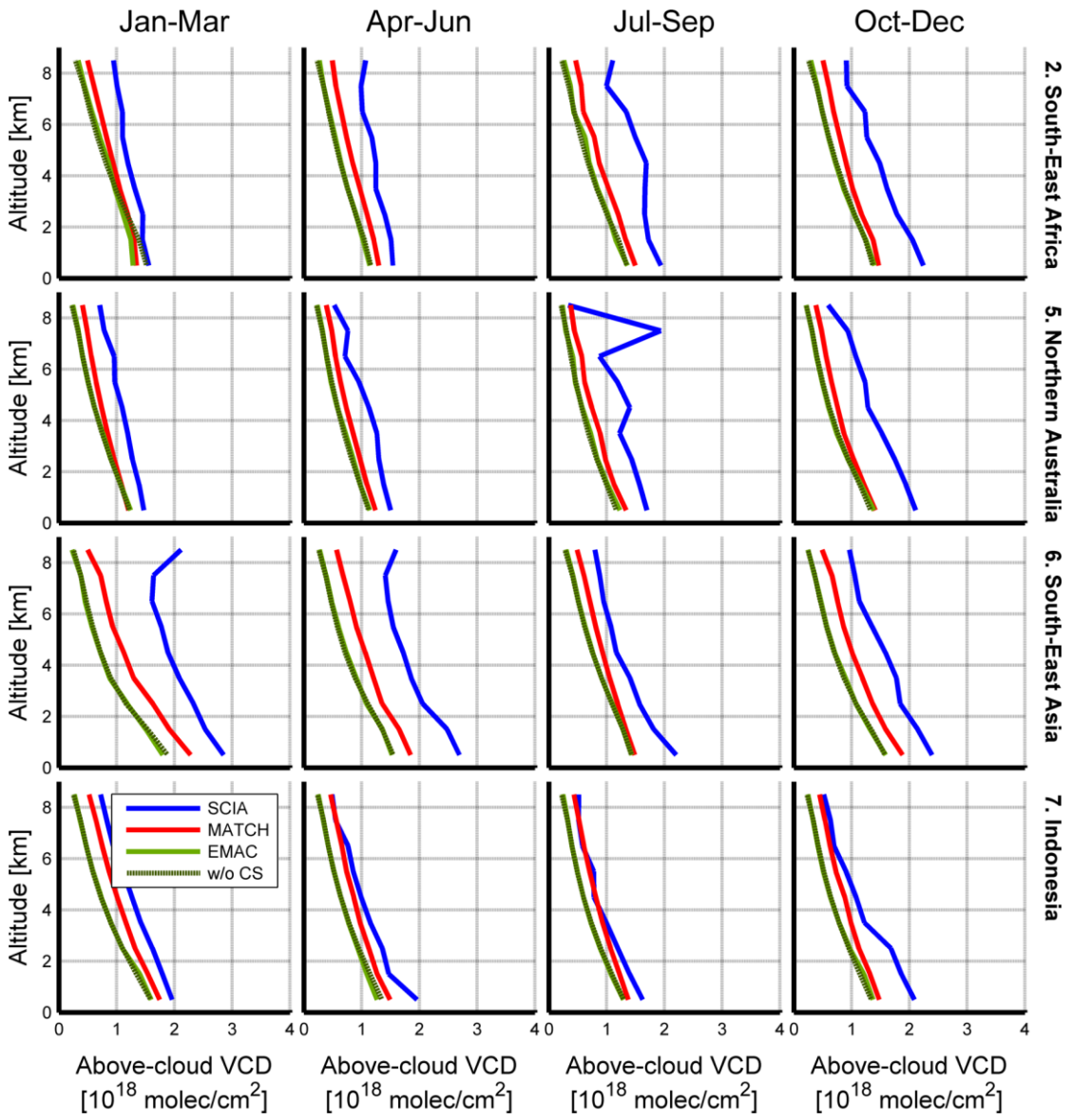

Fig. S1. Comparison of seasonally averaged profiles of CO PVCDs from SCIAMACHY observations and model simulations for selected regions. See text and caption of Fig. 4 for details.

B) Zonal and meridional cross sections

Fig. S2 provides zonal and meridional cross sections (compare with Figs. 5-7). For each season, first the cloud free total CO column is shown, followed by zonal/meridional sections for 20° latitude/longitude bands, respectively. For each latitude (longitude) band, the respective map of the cloud free total column is given on top (at left) for orientation. The other three panels depict, from top to bottom (left to right), SCIAMACHY measurements, EMAC model results, and MATCH model results. Note that the colour scale is different for satellite observations and models (SCIAMACHY: red numbers on top of colour bar; models: black numbers below colour bar).

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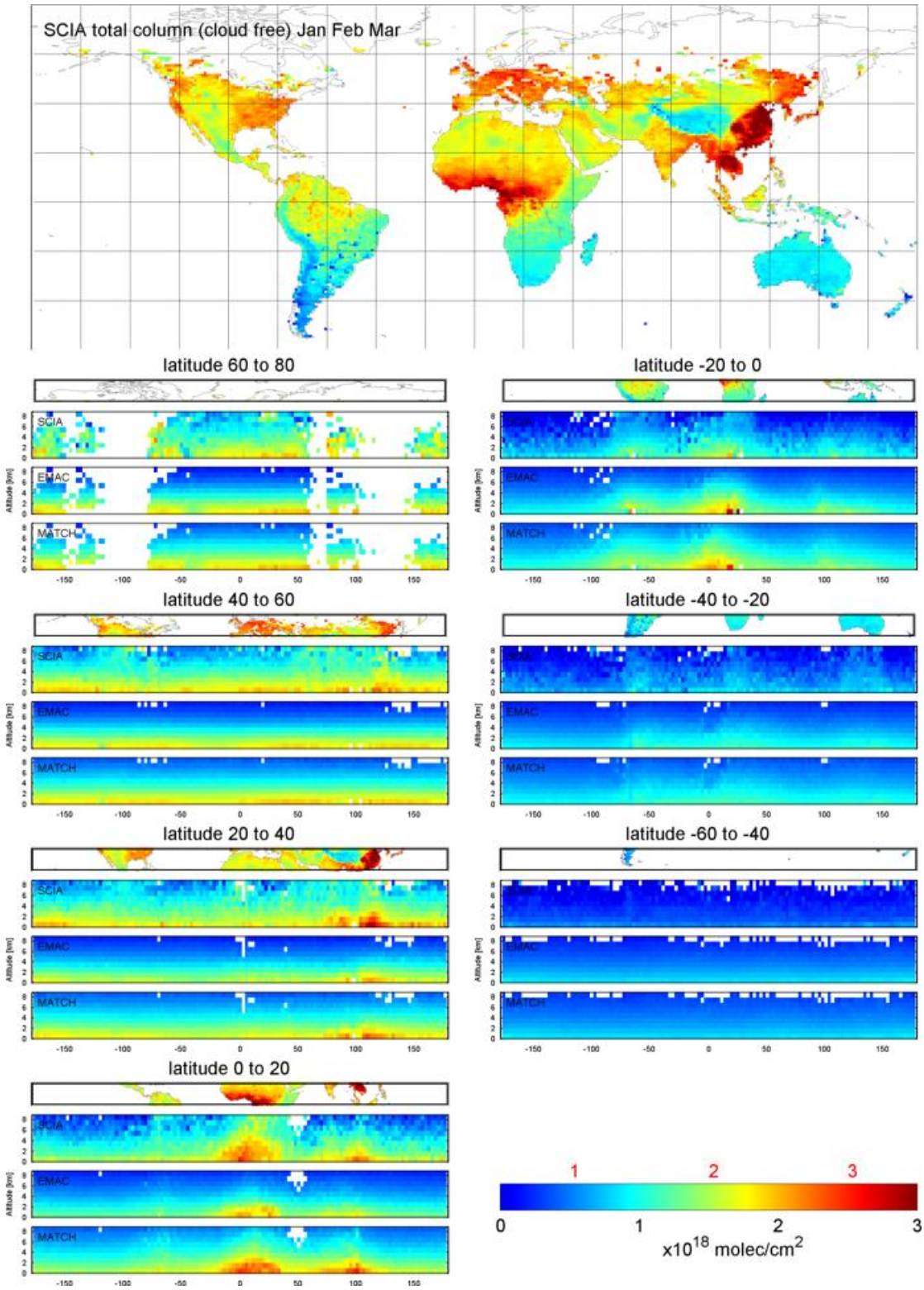

Fig. S2. Total CO VCD (cloud free) (top) and zonal cross sections of profiles of CO PVCDs for Jan-Mar 2003-2005.

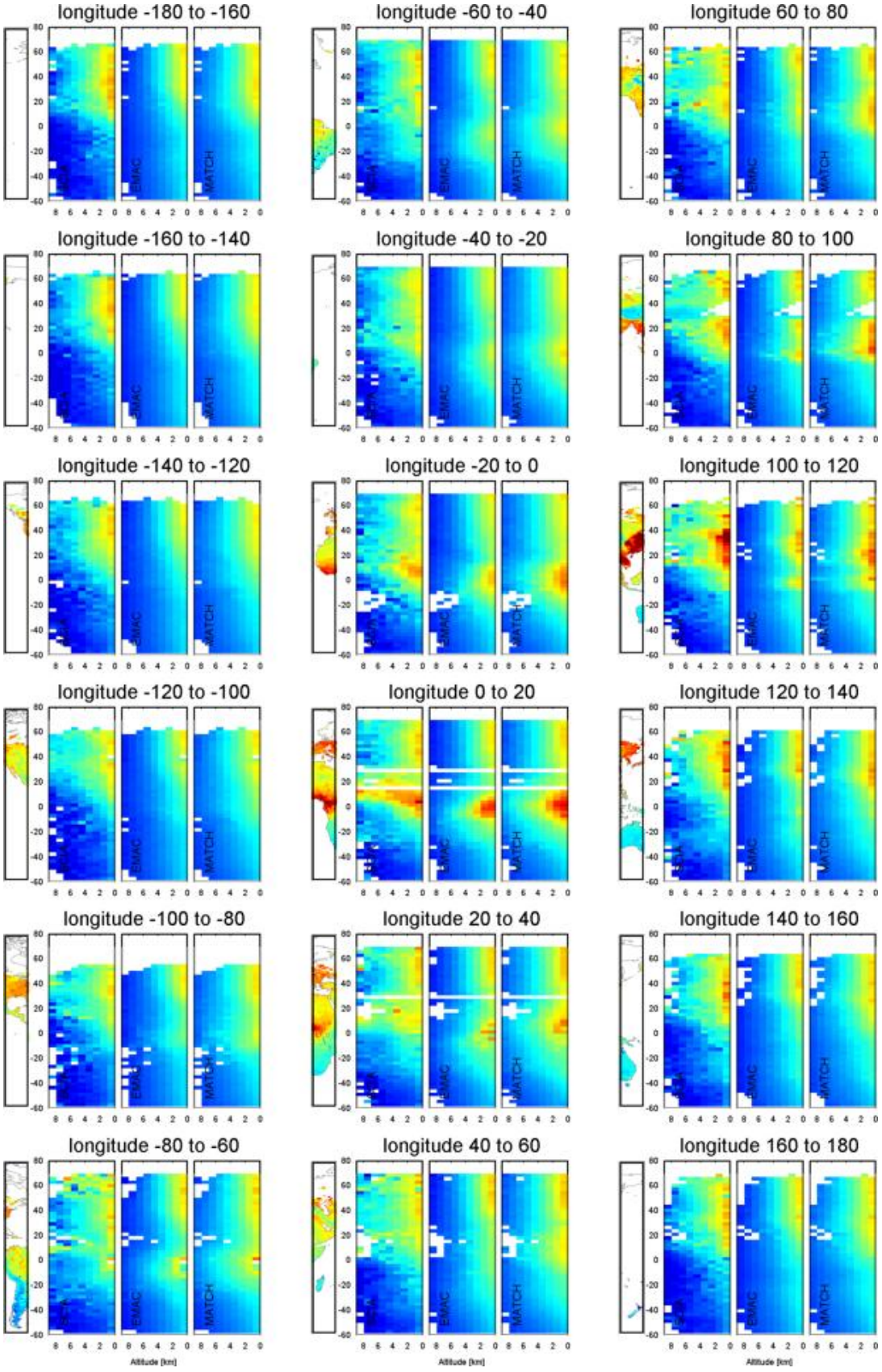

Fig. S2 (cont). Meridional cross sections of profiles of CO PVCDs for Jan-Mar 2003-2005.

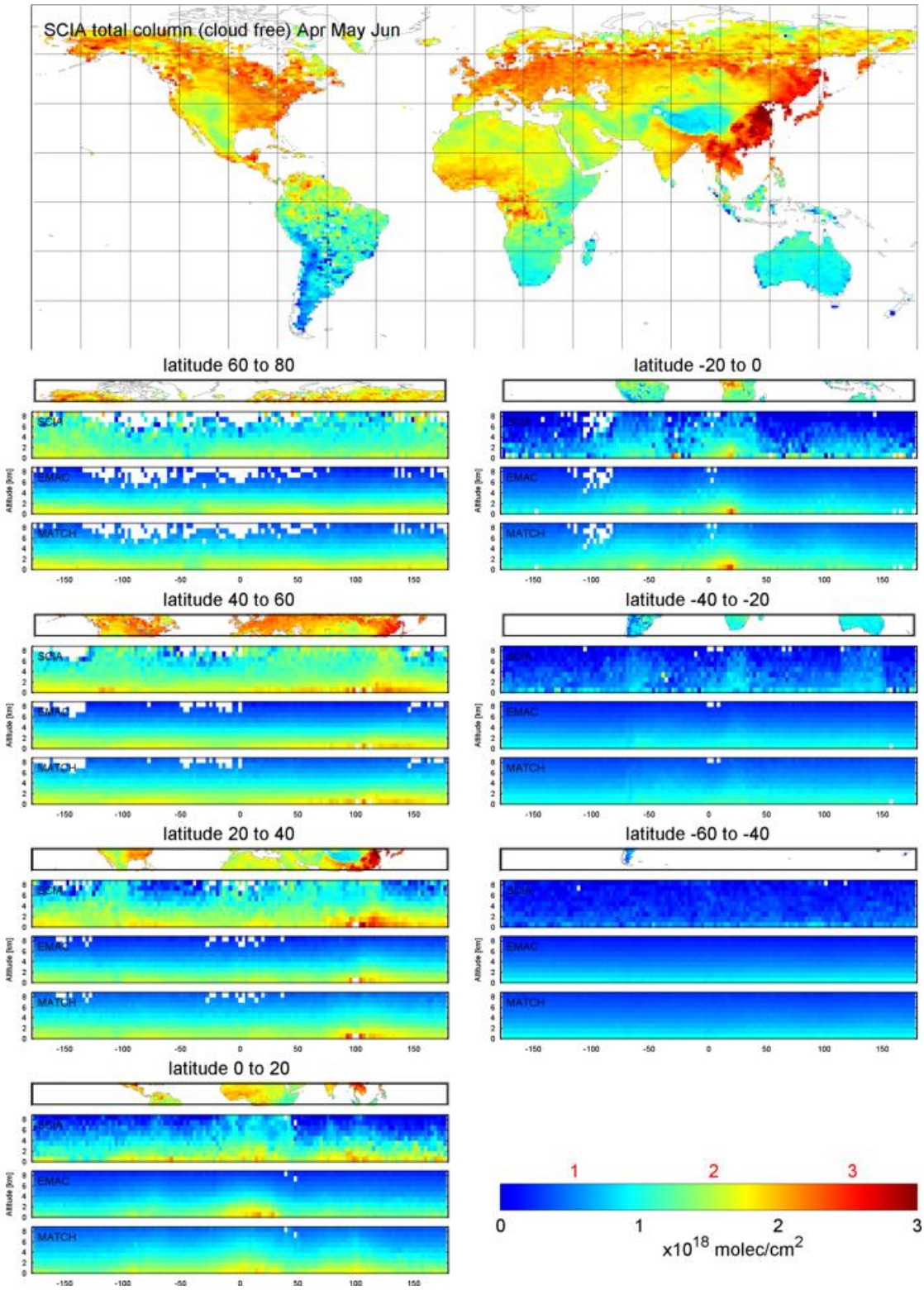

Fig. S2 (cont). Total CO VCD (cloud free) (top) and zonal cross sections of profiles of CO PVCDs for Apr-Jun 2003-2005.

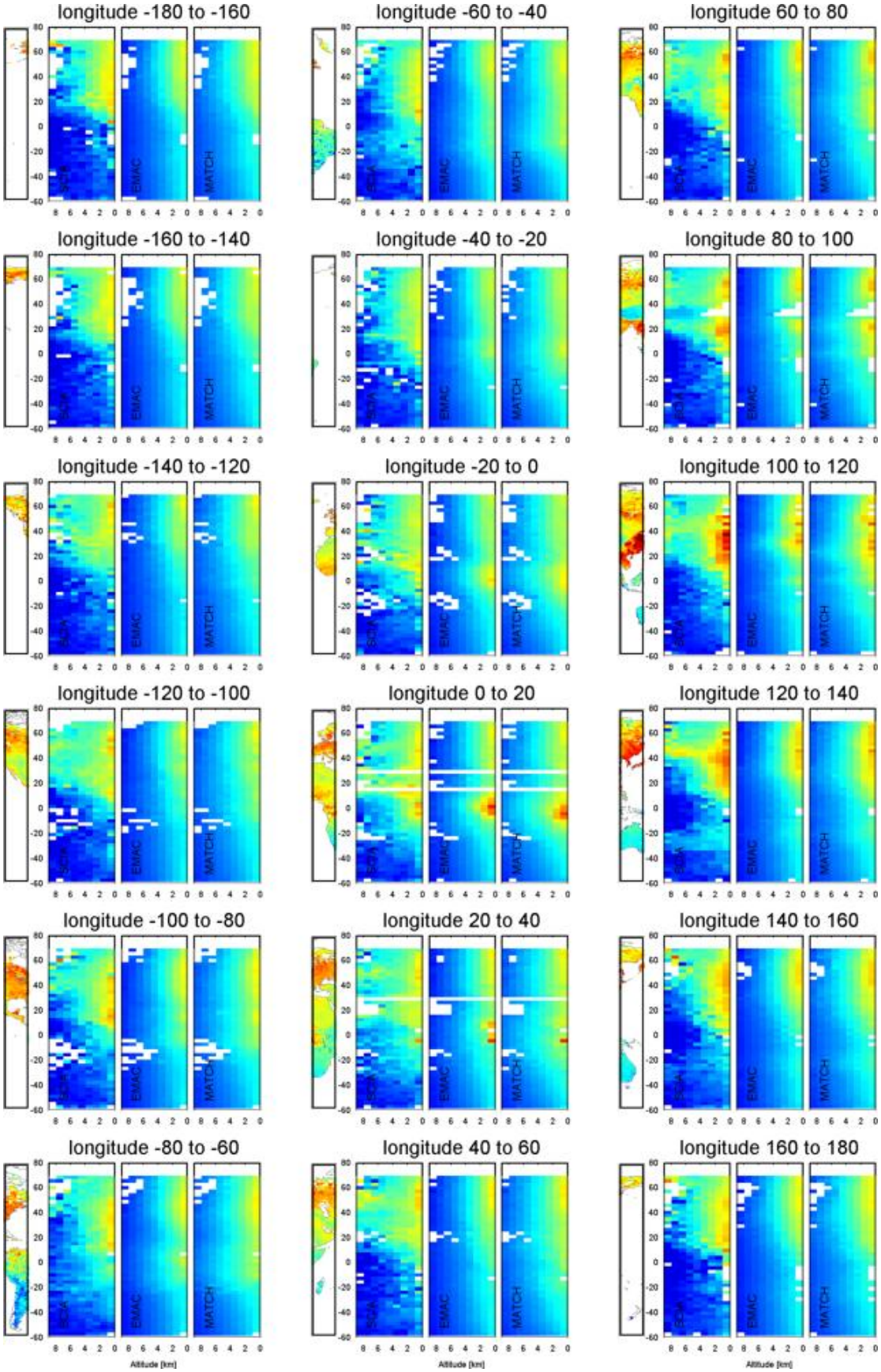

Fig. S2 (cont). Meridional cross sections of profiles of CO PVCDs for Apr-Jun 2003-2005.

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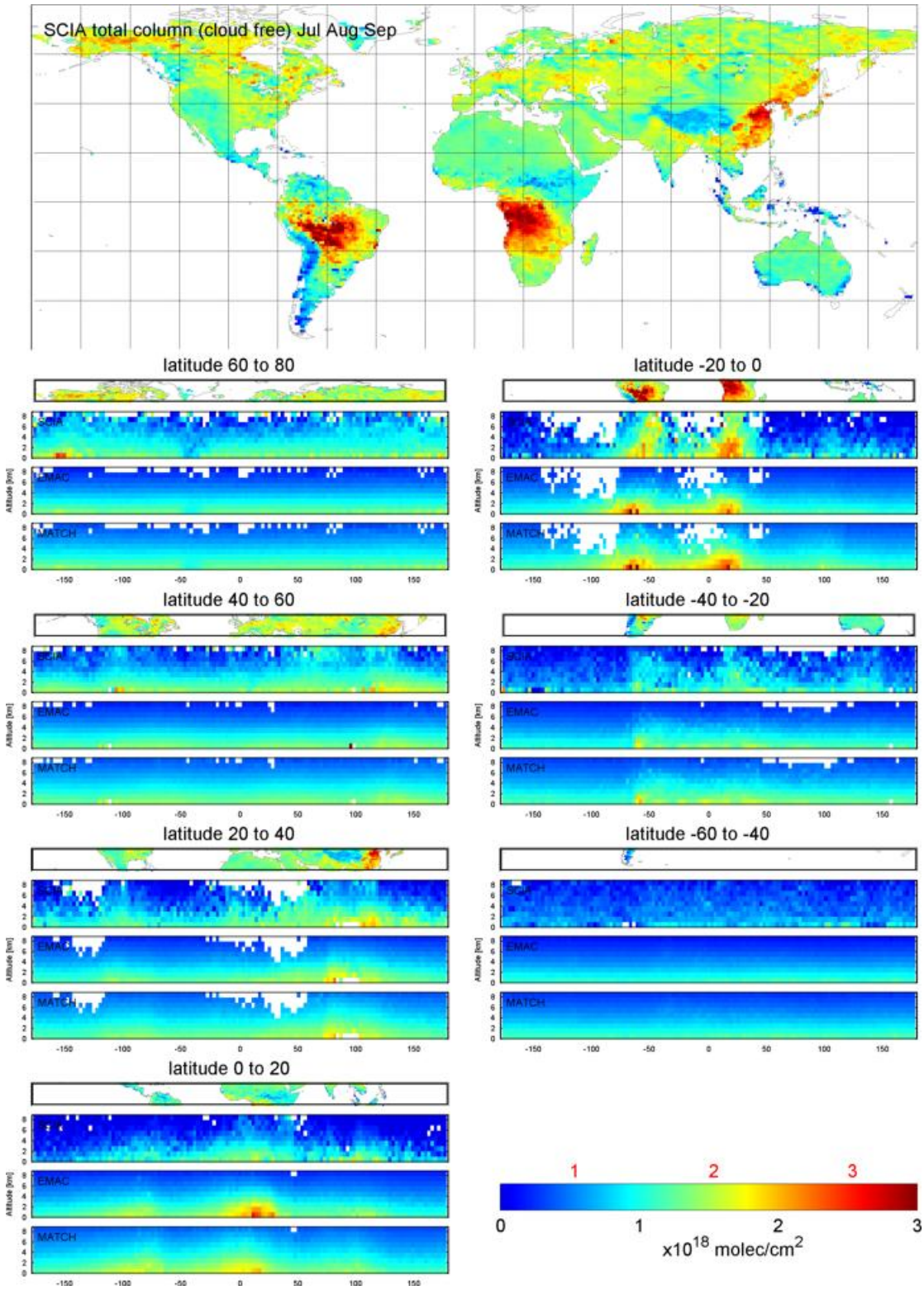

Fig. S2 (cont). Total CO VCD (cloud free) (top) and zonal cross sections of profiles of CO PVCDs for Jun-Sep 2003-2005.

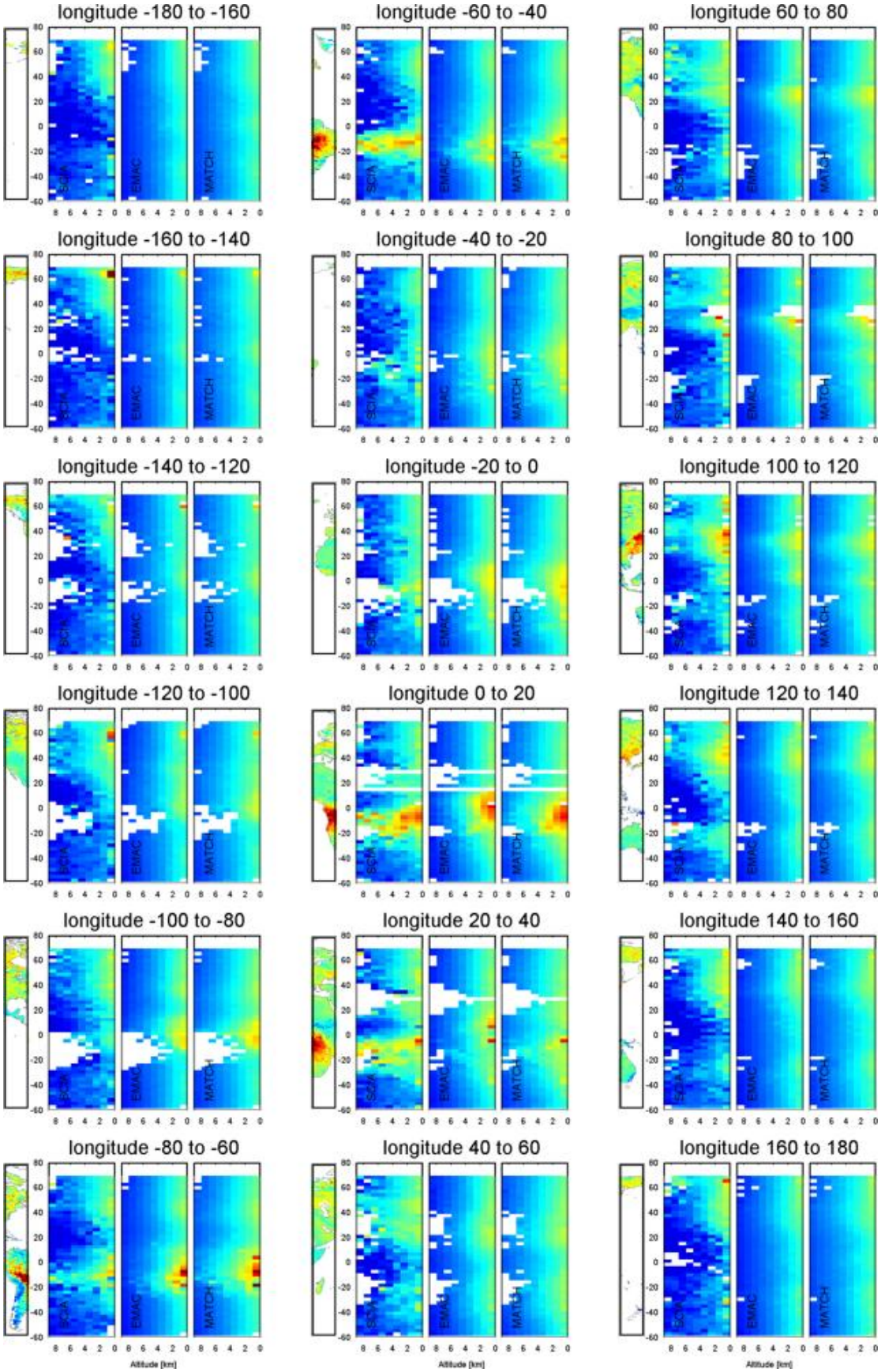

Fig. S2 (cont). Meridional cross sections of profiles of CO PVCDs for Jul-Sep 2003-2005.

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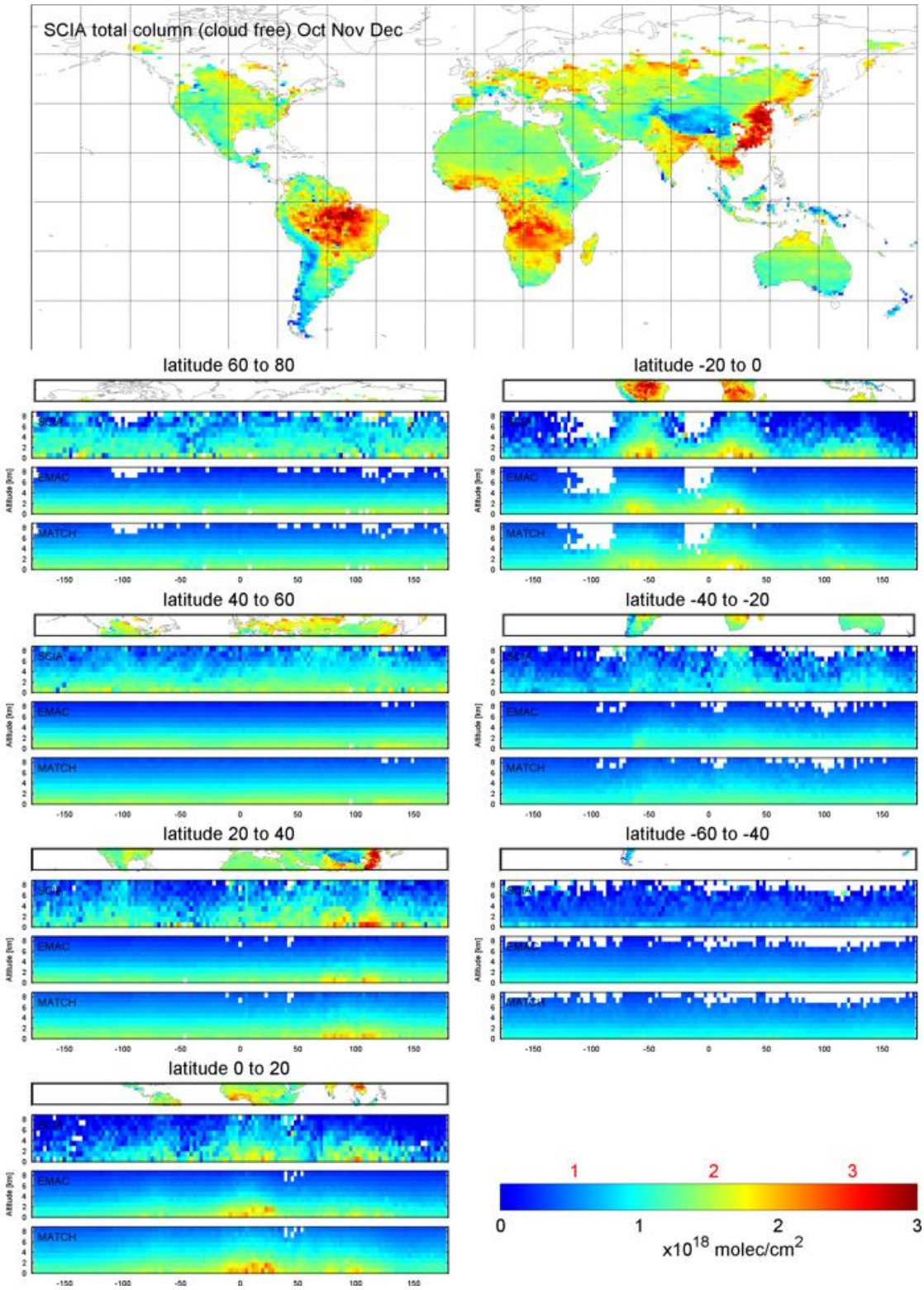

Fig. S2 (cont). Total CO VCD (cloud free) (top) and zonal cross sections of profiles of CO PVCDs for Oct-Dec 2003-2005.

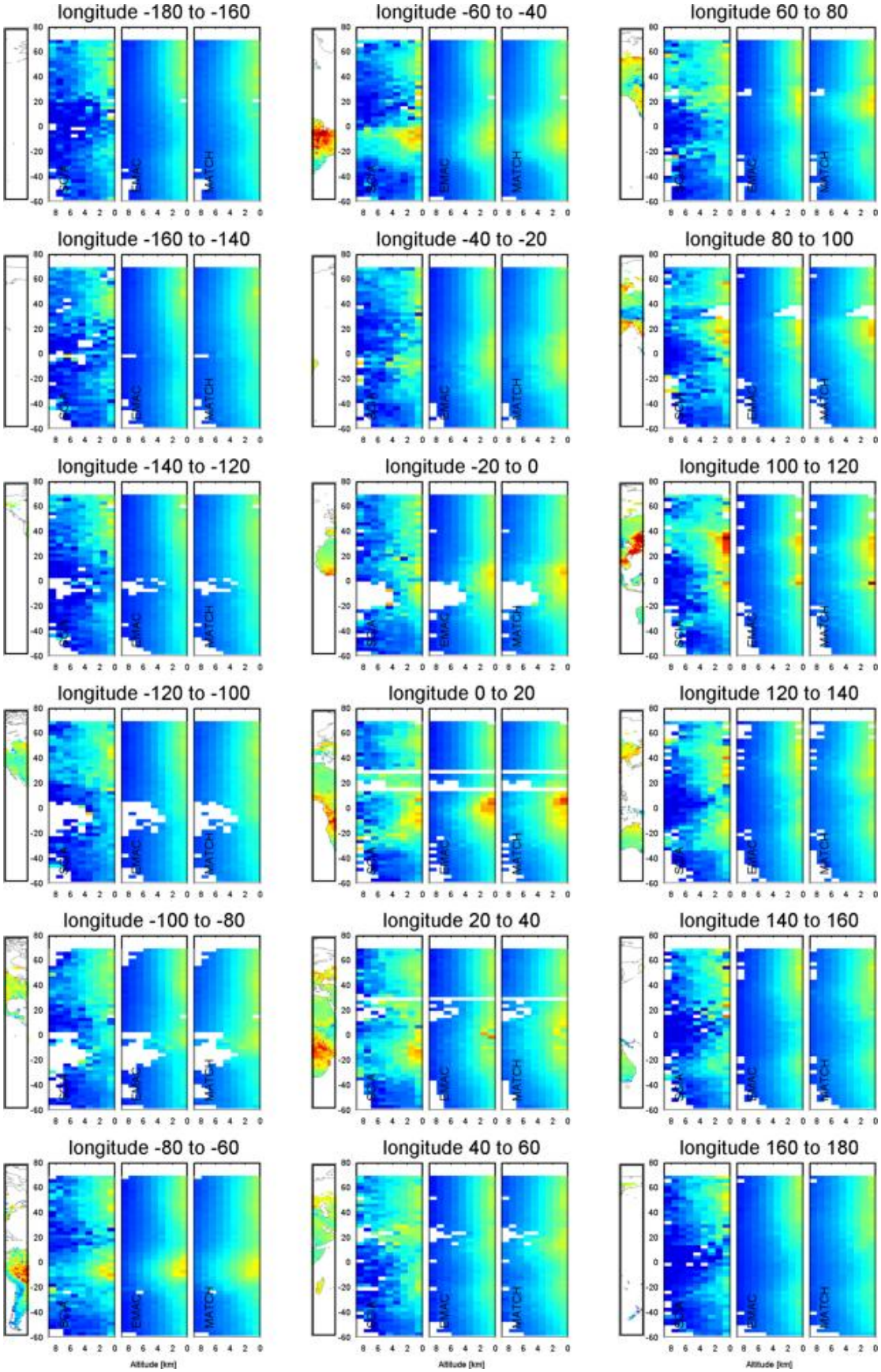

Fig. S2 (cont). Meridional cross sections of profiles of CO PVCDs for Oct-Dec 2003-2005.