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Ionosphere of Mars observed by Mars Express.

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The Martian ionosphere is studied at different solar zenith angles using the local electron number densities and total electron content (TEC) derived from the observations by MARSIS onboard Mars Express. The data are complemented by the ASPERA-3 observations which provide us with the information about upward/downward velocity of the low-energy ions and electron precipitation. We consider the Mars Express observations at different solar cycle intervals. Different factors which influence the ionosphere dynamics are analyzed. The focus is made on a role of the crustal magnetic field on the Martian ionosphere and its influence on ion escape.