PRESSURE BALANCE AT MARS AND SOLAR WIND INTERACTION WITH THE MARTIAN ATMOSPHERE. A. M. Krymskii[1] , N. F. Ness[2], D. H. Crider[3], T. K. Breus[4], M. H. Acuna[5] and D. Hinson[6]. [1]Rostov State University, Rostov-on-Don, Russia, [2]Bartol Research Institute, University of Delaware, Newark, DE, USA, [3]The Catholic University of America, Washington, DC, USA, [4]Space Research Institute (IKI), Moscow, Russia, [5]NASA-Goddard Space Flight Center, Greenbelt, MD USA, [6]Center for Radar Astronomy, Stanford University, Stanford, CA, USA.

Introduction: The strongest crustal fields are located in certain regions in the Southern hemisphere. In the Northern hemisphere, the crustal fields are rather weak and usually do not prevent direct interaction between the SW and the Martian ionosphere/atmosphere. Exceptions occur in the isolated mini-magnetospheres formed by the crustal anomalies. Electron density profiles of the ionosphere of Mars derived from radio occultation data obtained by the Radio Science Mars Global Surveyor (MGS) experiment have been compared with the crustal magnetic fields measured by the MGS Magmetometer/Electron Reflectometer (MAG/ER) experiment. A study of 523 electron density profiles obtained at latitudes from $+67^{o}$ to $+77^{o}$ has been conducted. The effective scale-height of the electron density for two altitude ranges, 145-165 km and 165-185 km, and the effective scale-height of the neutral atmosphere density in the vicinity of the ionization peak have been derived for each of the profiles studied. For the regions outside of the potential mini-magnetospheres, the thermal pressure of the ionospheric plasma for the altitude range 145-185 km has been estimated. In the high latitude ionosphere at Mars, the total pressure at altitudes 160 and 180 km has been mapped. The solar wind interaction with the ionosphere of Mars and origin of the sharp drop of the electron density at the altitudes 200-210 km will be discussed.