The contribution of the galactic cosmic rays (CR) to the ionization of the ionospheres of the outer planets increases with the distance from the Sun. We propose a model which generalizes the differential $D(E)$ spectra of galactic and anomalous CR in the planetary atmospheres during solar cycle. On the base of the computed model parameters for 1 AU integral cosmic ray spectra $D(>E)$ for the Earth and outer planets: Jupiter, Saturn, Uranus and Neptune are obtained at solar minimum and maximum. The average radial gradient used in the model is 3%/AU for $>0.2$ GeV galactic protons and $>0.065$ GeV/nucl alpha particles. This value decreases with increasing rigidity (or energy) in the GV (or GeV) range and reaches 1%/AU for the nuclei $>10$ GeV/nucl. The average radial gradients are 7%/AU for anomalous protons and 8.5%/AU for anomalous helium. The obtained results are compared with experimental data and theoretical models. We show that in periods of low solar activity and with increase of the planetary distances from the Sun the role of the primary cosmic ray fluxes increases as an ionization factor in the Earth’s and planetary environments.