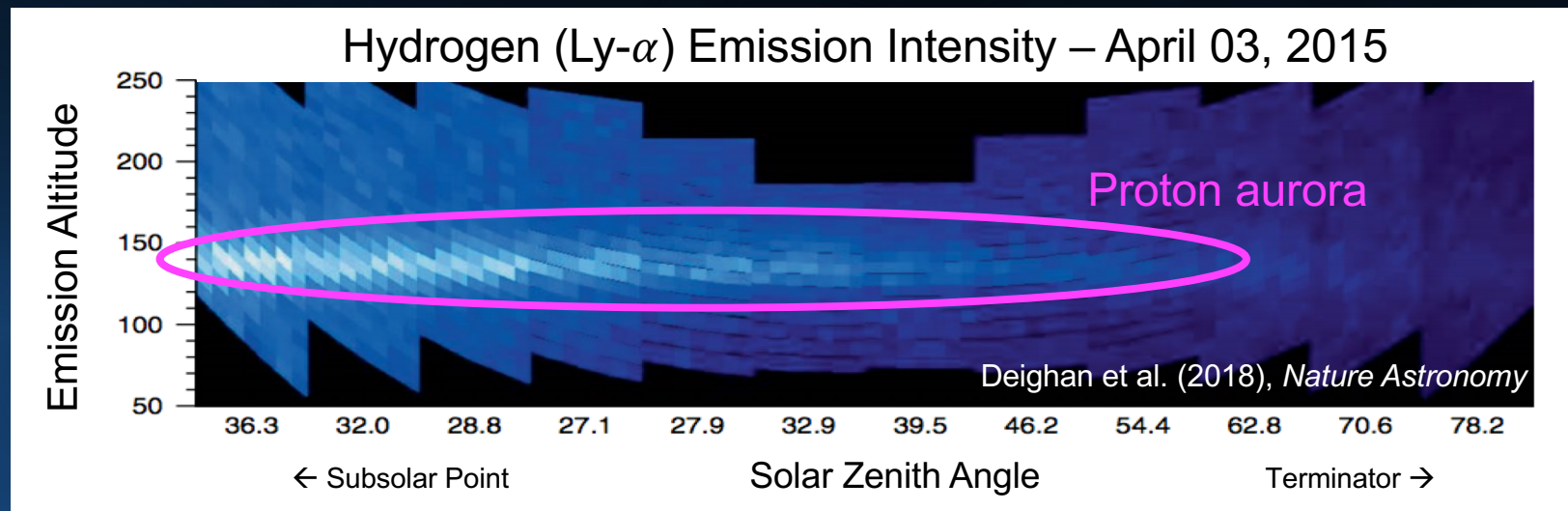


MAVEN Observes Mars Proton Aurora



New data from MAVEN is being used to understand how the Martian upper atmosphere respond to the Sun and solar wind.

- A bright transient emission from hydrogen in the Mars upper atmosphere, was correlated with abnormally high fluxes of solar-wind protons inside the Martian magnetosphere. This was likely caused by solar-wind protons colliding with the extended atmosphere of Mars, becoming neutralized hydrogen atoms, and penetrating lower (~150 km) altitudes. As they collide with atmospheric molecules, some of these particles release energy as UV light.
- 'Proton aurora' are observed at Earth, which has a global magnetic field, but the driving mechanism is different than at unmagnetized Mars. MAVEN's observations suggest proton aurora could occur at other unmagnetized bodies such as Venus or exoplanets, and could teach us more about how a stellar wind deposits energy in these atmospheres.