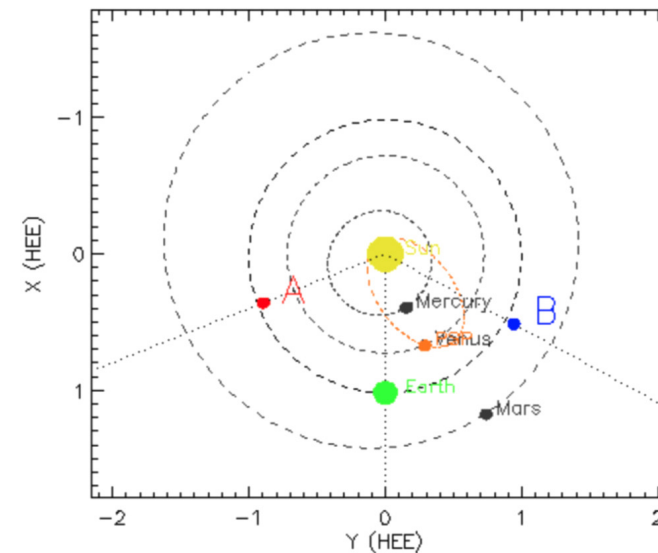
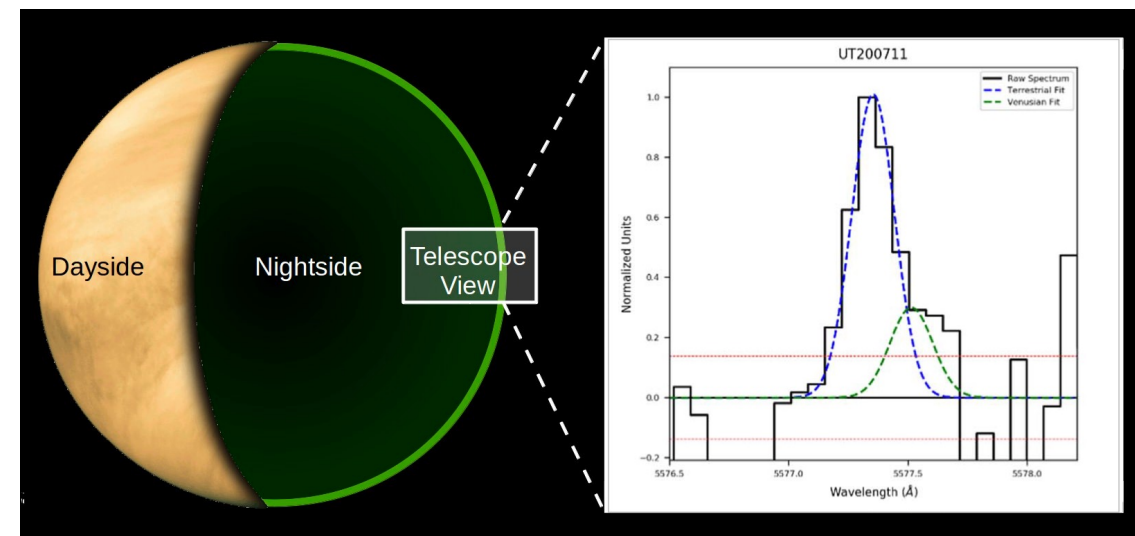


Understanding Faint Aurora at Venus with Parker Solar Probe

- Parker Solar Probe (PSP) encountered Venus during its 3rd gravity assist with Venus on July 11, 2020.
- Parker Solar Probe measured the solar wind during the visit.
- Venus's aurora was measured from ground telescopes at the same time.
- The Wang-Sheeley-Arge (WSA) model was used to predict the solar wind conditions at the time of the Parker Solar Probe Venus encounter.
- The WSA solar wind prediction was in good agreement with the observations from Parker Solar Probe.
- These observations and prediction compared with the aurora observations confirm that these are the first observations of faint Venusian aurora that is not due to solar transients like coronal mass ejections and solar flares – instead this aurora was due to just the solar wind.



The Heliocentric Earth Ecliptic (HEE) locations of STEREO-A (red), STEREO-B (blue), PSP (orange), and the terrestrial planets on 2020 July 11 at 8:00 UTC, in units of AU. Dashed lines indicate the orbit of each object. The location of PSP overlaps with that of Venus. Earth is highlighted in green. The dotted lines show the angular displacement of STEREO-A and -B from the Sun–Earth line (Image from the STEREO Science Center).



Green line emission from July 11, 2020, measured by telescope. The blue line comes from terrestrial emission. The blue line is from the faint aurora at Venus.