In Solar Space Vortex enclosing the Sun, velocity field (motion of mass less fluid-space) falls inversely as the square root of the distance from the Sun's center. The planet Mercury is carried by the solar vortex at an orbital speed of 47.9 km /s. The mean distance of Mercury from the Sun's center is 57.9 x $10^6$ km. If $V_m$ is the orbital velocity of Mercury: $V_m = k\ (47.9\ km/s) / (57.9 \times 10^6\ km)^{1/2}$ . From this, $k = 11.52 \times 10^9\ m^{3/2} / s$. If the radius of the Sun is $R_s$, and $V_s$ is the maximum tangential velocity field (of space) at the Sun's surface in the equatorial plane, then $V_s = k / (R_s)^{1/2}$. Substituting the value of k and the solar radius 6.9 x $10^8$m, $V_s$ = 436.7 km/s.

The proof of the existence of the above velocity field lies in the following.

1. Recorded data on solar wind [http://soho.nascom.nasa.gov/; 48 hours of solar wind data on 10th July 2002] varied from about 380 km/s to a maximum of about 500 km/s, giving an average of 440 km/s.

2. Surface gravity of the sun is calculated as the "inward acceleration field in the solar space vortex at the Sun's surface; $V_s^2 / R_s$. Substituting the value of $V_s$ derived above, and the Sun's radius, surface gravity of the Sun comes to 274 $m/s^2$, which comes to the same value as accepted to day.