Abstract Submitted
for the APR08 Meeting of
The American Physical Society

The Laws of Parallelism, Convergence and Divergence Applied to Some Astrophysical Phenomena STEWART BREKKE[1], Chicago Public Schools (retired) — The gravitational accelerations of various heavenly bodies can illustrate the concept of parallelism by plotting them over time forming straight lines. $g(earth) = 9.8m/s^2$, $g(moon) = 1.6m/s^2$ and $g(mars) = 3.4m/s^2$. The distance between the lines g(earth) and g(mars) is $6.4m/s^2$ and the distance between the lines g(earth) and g(moon) is $8.2m/s^2$. Thus, the greater parallelism (similarity) is between g(earth) and g(mars) since the distance between the lines is smaller than between g(earth) and g(moon). The Law of Convergence states that the smaller the angle between two curves, the greater the convergence. The Law of Divergence states that the greater the angle between two curves, the greater the divergence. In the evolution of post mainsequence stars the evolutionary Hayashi track makes and angle of about 115 for a 1M star, about 132 for a 5M star and for a 10M star 120. Therefore, the divergence of a 5M star is greater than for a 5M or 10M star or breater disimilarity from the main sequence track kstars. The angles of convergence of Hayashi tracks for stars approaching the main sequence is about 155 for a 4M, 160 for a 2M or 56 for a 0.1M star indicating that the Hayashi track for a 0.1M star is more similar to the main sequence stars. In nucleosynthesis of elements the angle of divergence is approx. 11.35 degrees between the curve for light nuclei and heavier nuclei in the proton-neutron curves. In this manner convrgence, divergence and parallelism can be quantified for phenomena.

[1]previous papers presented at various APS meetings

Stewart Brekke
Chicago Public Schools (retired)

Date submitted: 11 Feb 2008 Electronic form version 1.4