source of the intrinsic energy fluxes observed to emanate from the Earth and Jovian planets. However, while this might be feasible for planet-sized bodies, stars would exhaust their deuterium supply within a few million years due to their much higher luminosities. Consequently unlike genic energy, cold fusion does not explain why the planets share a common mass-luminosity relation with lower main sequence stars.

5. UPPER MAIN SEQUENCE STARS

If the planets and lower main sequence stars are powered by genic energy, then by projecting their mass-luminosity relation up to 1 $M_\odot$ we may determine the genic energy contribution to the Sun's total luminosity. Using the regression line of Harris *et al.*, we find that the Sun should have a genic energy luminosity of 0.58 ± 0.16 $L_\odot$. This value essentially coincides with 0.54 ± 0.13 $L_\odot$, the amount unaccounted for by the Kamiokande-II solar neutrino experiment, and lies within about one standard deviation of 0.75 ± 0.12 $L_\odot$, the amount unaccounted for by the ^{37}Cl solar neutrino experiment.

The gap between the upper and lower mass luminosity relations would represent the contribution from fusion that would generate an increasingly large share of the total radiated energy at higher masses. Standard fusion models predict that nuclear burning should begin at around 0.08 $M_\odot$($L > 5 \times 10^{-4} L_\odot$).(26) The genic energy scenario instead implies that nuclear burning begins to make a noticeable contribution only above 0.45 $M_\odot$($L \sim 0.07$ $L_\odot$), where the lower main sequence bends upward to form the upper main sequence. This inflection point could also mark the point at which heat transport changes from a predominantly convective process to a predominantly radiative process. Current theoretical models place this transition point at around 0.35 $M_\odot$, the radiative core being entirely absent in a 0.3 $M_\odot$ star and comprising about 70% of the stellar mass in a 0.4 $M_\odot$ star.(10) By admitting a secondary power source such as genic energy, this transition point would be pushed toward higher masses, closer to the 0.45 $M_\odot$ inflection point.(27) This would close the gap between theory and observation in regards to the 0.45 $M_\odot$ transition point. In such a case the change from lower main sequence genic energy production to upper main sequence genic-plus-fusion energy production could be the critical perturbation that initiates the formation of a star's radiative core.

If the power source for lower main sequence stars is primarily non-nuclear, with fusion kicking in at the transition point from the lower to the upper main sequence, then the stellar luminosity function would be expected to have a bimodal shape. In fact, such is found to be the case. As seen in Fig. 3(28) the function's downward trend at higher luminosities is interrupted by an inflection at 0.07 $L_\odot$, the same point at which the mass-luminosity relation makes its upward bend. With fusion energy coming on line at this transition point as a macroscopic process, the star's luminosity would be boosted to a higher level. As a result, an increased number of stars would populate the luminosity category immediately above critical point, thereby forming a secondary lobe in the luminosity function. The upper main sequence stars composing this secondary lobe would be distinguished from those of the primary lobe in that they would be powered by two energy sources rather than one.

Genic energy could also be powering white dwarfs. Conventional theory suggests that these objects derive their energy from heat stored up during their main sequence nuclear-burning phase. However, the observed absence of degenerate dwarfs with luminosities less than 10^{-5} $L_\odot$ suggests that some non-nuclear energy source other than stored heat must be powering them. Freese(29) has suggested that monopole-catalyzed nucleon decay may be the mystery energy source. Such a hypothetical process is unnecessary with the genic energy mechanism of subquantum kinetics, which adequately accounts for their outputs.

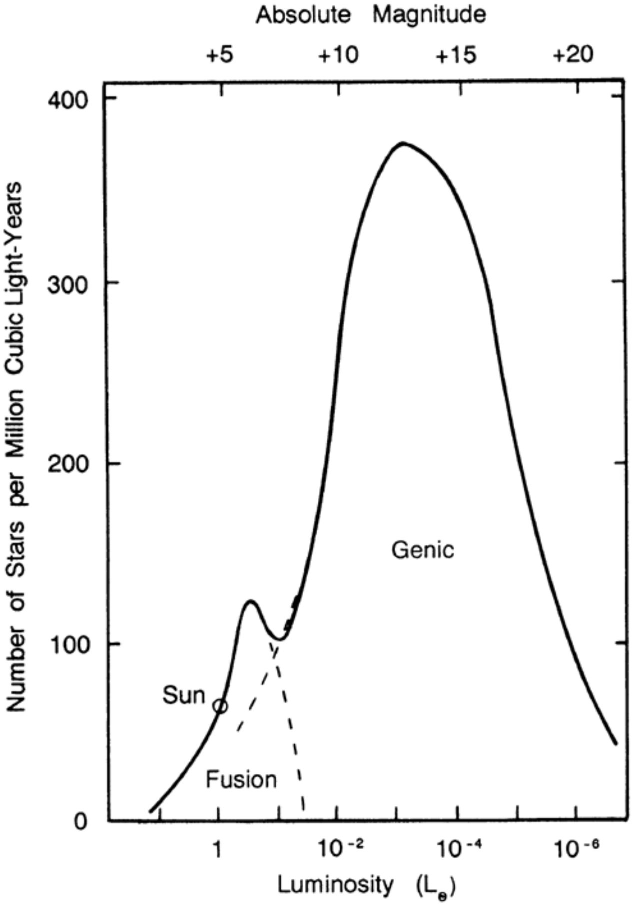

Figure 3. The luminosity function for stars in our galaxy. The profile charts the prevalence of stars in each of a series of consecutive luminosity increments.

6. MODELED GENIC ENERGY OUTPUTS

The intrinsic genic energy luminosities of the planets would deviate by varying amounts from the lower main sequence mass-luminosity relation due to individual differences in $\bar{C}$, $\bar{\rho}$, and $\bar{T}$ for each planet, where $\bar{\rho}$ is the planet's average mass density. Gravitational potential, ϕ_g, would also be figured differently for the planets. In the case of lower main sequence stars, gravity potential would be determined primarily by the star's intrinsic mass, whereas in the low-mass planetary regime, external gravitational potential sources such as the Sun and galactic disk would begin making significant contributions.

Equations (7) may be used to estimate a body's genic energy luminosity L_g, knowing its mass M, average amplification coefficient $\bar{\mu}$, average specific heat $\bar{C}$, and average temperature $\bar{T}$. The values adopted for these parameters as well as the derived L_g values and observed intrinsic luminosities, L_i, are presented in Table II for the Sun and planets, and for the white dwarf Sirius B. The L_g values given here, being based on average density and temperature values, are only approximations, since a body's density and temperature vary considerably with radial distance.