at the start of each exposure and performing a mass analysis of the recovered argon. The argon so isolated was removed from the charcoal, purified, and counted in a small low-level counter. Pulse height analysis was used to observe the 2.8 keV Auger electron from the electron-capture decay of argon-37. The counter was operated in anticoincidence with guard proportional and scintillation counters, a technique commonly used in low-level counting. The pulse height spectrum is shown in Fig. 3. The position of the argon-37 Auger electron peak was determined by calibrating the counter with Fe^{55} X-radiation. The position of the argon-37 peak is shown, and it can be seen that no distinguishable argon-37 peak was observed. A safe upper limit to the neutrino-capture rate may be deduced by taking all the events in the argon-37 region of the spectrum, and computing the limiting solar neutrino capture rate.

The rate so derived was found to be less than 0.3 neutrino captures per day in the 6.1 tons of C_2Cl_4. In terms of product of flux and cross section the limit may be given as

$$\sum \phi\sigma \leqslant 16 \times 10^{-35} \text{ sec}^{-1} .$$

This value may be compared to the calculated value for this product for solar neutrinos discussed earlier,

$$\sum_{\text{Solar}} \phi\sigma = 3 \pm 2 \times 10^{-35} \text{ sec}^{-1} .$$

It is apparent from a comparison of the experimental limit from this 1000-gallon detector that we are a factor of five away from detecting the calculated rate.

The results of the 1000-gallon experiment may be used to set limits on the extraterrestrial neutrino flux. Since there have been speculations on possible values of the neutrino flux it is interesting to note the limits that can be set as a function of the neutrino energy. Combining our results and the cross sections of Bahcall[4] for the $Cl^{37}(\nu, e^-)Ar^{37}$ reaction, the neutrino