

## Results

Two experimental runs are here reported. One of these runs was reported earlier,<sup>1</sup> and was from a 110 day exposure from day 174 to day 284, 1967 (run no. 9). The recovery of Ar<sup>36</sup> carrier gas for this experiment was 95 percent. The pulse height spectra for a 35 day count and a 71 day count (started on day 177) are shown in Figure 3. These spectra may be compared to the background spectrum obtained with the counter filled with Ar<sup>36</sup> that was purified by the same procedure as used for the sample from the tank. It may be noted that 10 counts were observed in the argon sample recovered from the tank in the 14 channels centered about channel 50, whereas the background for an equivalent period of time was 11 counts. Hence, in this experiment (run no. 9) the difference in the total accumulated counts in the argon recovered from the tank and the background was  $-1 \pm 5$  counts for the 35 day period. There is no evidence of Ar<sup>37</sup> activity in the argon recovered from the tank, and the experiment can only give an upper limit to the Ar<sup>37</sup> production rate in the tank from solar neutrinos. Using 5 counts as an upper limit to the Ar<sup>37</sup> activity observed during the 35 day period, and allowing for radioactive growth and decay, argon recovery efficiency, and counting efficiency, one would conclude the Ar<sup>37</sup> production rate in the tank was less than or equal to 0.5 Ar<sup>37</sup> atoms per day.

Another experiment was performed in which the period of irradiation was 130 days from day 22 to 152, 1968 (run no. 12). An Ar<sup>36</sup> recovery efficiency of 97 percent was achieved, and the argon gas sample recovered had a volume of 0.42 cm<sup>3</sup>. The counting data for this experiment is given in Figure 4, along with a background count made immediately prior to introducing the argon recovered from the tank. The count was continued for 131 days, and the figure shows four sequential pulse height spectra obtained during this period.