the material that we use is stored for a long period of time underground before use. Just before a run it is thoroughly heated (350°C) and evacuated in our processing system. In runs 36 and 37 molecular sieve recently brought underground was used. Our records indicate run 27 could also have been contaminated in this way. In all other experiments reported ^{37}Ar contamination from this source is very much less likely. Now that we realize this possible source of contamination we can be certain that ^{37}Ar contaminated molecular sieve will not be used in future experiments. An experimental determination of the ^{37}Ar remaining in molecular sieve after baking and evacuating will be carried out in the near future to help evaluate the magnitude of the effect on these experiments. Starting with run 40 a charcoal absorber at room temperature will be used in place of the molecular sieve.

If the variations in ^{37}Ar production rates plotted in figure 2 are regarded as statistical variations, then one can obtain an average rate useful for setting an upper limit on the solar neutrino flux. Averaging all results we obtain the following results:

	^{37}Ar atoms/day
Average ^{37}Ar production rate all runs	$= 0.32 \pm 0.08$
Cosmic ray production rate (muons + ν_μ) Ref. 4	$= 0.08 \pm 0.024$
^{37}Ar production rate above the cosmic ray background ascribable to solar neutrinos	$= 0.24 \pm 0.09$

$$\Sigma\phi\sigma = 5.24(0.24 \pm 0.09) = 1.3 \pm 0.4 \text{ SNU}$$

In view of uncertainties described above and uncertainties in background processes we regard this result as a 1σ upper limit to the solar neutrino flux of 1.7 SNU. (SNU $\equiv$ solar neutrino unit, 10^{-36} captures per sec per ^{37}Cl atom).