

Recently two other suggestions for solar neutrino detection have appeared. M. Freedman and his associates¹⁸ have suggested using the $^{205}\text{Tl}(\nu, e^-)^{205\text{m}}\text{Pb} \rightarrow ^{205}\text{Pb}$ reaction (threshold 46 keV) that leads to the isotope ^{205}Pb with a half life of 1.6×10^7 years. This approach has the advantage of giving information about the solar neutrino flux in the past, but has the disadvantage of requiring the experimenter to use a naturally occurring thallium mineral. The problems of obtaining a suitable sample and of developing a technique for measuring ^{205}Pb are formidable, but the prospects are hopeful. R. S. Raghavan¹⁹ has proposed a direct counting detector based upon the $^{115}\text{In}(\nu, e^-)^{115\text{m}}\text{Sn} \rightarrow ^{115}\text{Sn}$ reaction. The attractive feature of this reaction is that $^{115\text{m}}\text{Sn}$ decays by emitting two successive gamma with energies 116 and 498 keV making it possible to use a triple coincidence technique to reduce detector background. The reaction has a low threshold 128 keV and could be used to observe neutrinos from the H-H reaction.

Although there are many new ideas for observing neutrinos, it appears that the original $^{37}\text{Cl}-^{37}\text{Ar}$ method suggested by Pontecorvo 28 years ago is the simplest from a technical viewpoint, and may even be the best for observing neutrinos from the basic proton reaction in the sun.