

## **THE FLUX AND SPECTRUM OF SOLAR NEUTRINOS AT SUPER-KAMIOKANDE**

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Data collected at the Super-Kamiokande detector have been used to make observations of the flux and spectrum of neutrinos that originate in the fusion reactions inside the center of the Sun. Previous observations of solar neutrinos have resulted in fluxes that are one third to one half the values predicted by solar models, a situation that has been labeled "the solar neutrino problem". Solar neutrinos are observed at Super-Kamiokande through the detection of the recoil electron from neutrino-electron scattering in the water of the detector. The measured flux is  $2.32 \pm 0.03(\text{stat.}) \pm 0.08(\text{syst.}) \times 10^6 / \text{cm}^2 / \text{s}$ , which is 0.451 the flux predicted by the latest Bahcall and Pinsonneault solar model. Observations of the spectrum of recoil electrons above 5.0 MeV and variations in the neutrino flux in different times of the day and different seasons of the year are also performed. The implications of these results for the solution to the solar neutrino problem by neutrino oscillations are also discussed.