

The Super-Kamiokande Collaboration

Fukuda,Y.¹ , Hayakawa,T.¹ , Ichihara,E.¹ , Inoue,K.¹ , Ishihara,K.¹ , Ishino,H.¹ , Itow,Y.¹ , Kajita,T.¹ ,
Kameda,J.¹ , Kasuga,S.¹ , Kobayashi,K.¹ , Kobayashi,Y.¹ , Koshio,Y.¹ , Miura,M.¹ , Nakahata,M.¹ ,
Nakayama,S.¹ , Okada,A.¹ , Okumura,K.¹ , Sakurai,N.¹ , Shiozawa,M.¹ , Suzuki,Y.¹ , Takeuchi,Y.¹ ,
Totsuka,Y.¹ , Yamada,S.¹ , Earl,M.² , Habig,A.² , Kearns,E.² , Messier,M.D.² , Scholberg,K.² ,
Stone,J.L.² , Sulak,L.R.² , Walter,C.W.² , Goldhaber,M.³ , Barszczak,T.⁴ , Casper,D.⁴ , Gajewski,W.⁴ ,
Kropp,W.R.⁴ , Price,L.R.⁴ , Reines,F.⁴ , Smy,M.⁴ , Sobel,H.W.⁴ , Vagins,M.R.⁴ , Ganezer,K.S.⁵ ,
Keig,W.E.⁵ , Ellsworth,R.W.⁶ , Tasaka,S.⁷ , Flanagan,J.W.⁸ , Kibayashi,A.⁸ , Learned,J.G.⁸ ,
Matsuno,S.⁸ , Stenger,V.J.⁸ , Takemori,D.⁸ , Ishii,T.⁹ , Kanzaki,J.⁹ , Kobayashi,T.⁹ , Mine,S.⁹ ,
Nakamura,K.⁹ , Nishikawa,K.⁹ , Oyama,Y.⁹ , Sakai,A.⁹ , Sakuda,M.⁹ , Sasaki,O.⁹ , Echigo,S.¹⁰ ,
Kohama,M.¹⁰ , Suzuki,A.T.¹⁰ , Haines,T.J.¹¹ , Blaufuss,E.¹² , Kim,B.K.¹² , Sanford,R.¹² , Svoboda,R.¹² ,
Chen,M.L.¹³ , Goodman,J.A.¹³ , Sullivan,G.W.¹³ , Hill,J.¹⁴ , Jung,C.K.¹⁴ , Martens,K.¹⁴ , Mauger,C.¹⁴ ,
McGrew,C.¹⁴ , Sharkey,E.¹⁴ , Viren,B.¹⁴ , Yanagisawa,C.¹⁴ , Doki,W.¹⁵ , Miyano,K.¹⁵ , Okazawa,H.¹⁵ ,
Saji,C.¹⁵ , Takahata,M.¹⁵ , Nagashima,Y.¹⁶ , Takita,M.¹⁶ , Yamaguchi,T.¹⁶ , Yoshida,M.¹⁶ , Kim,S.B.¹⁷ ,
Etoh,M.¹⁸ , Fujita,K.¹⁸ , Hasegawa,A.¹⁸ , Hasegawa,T.¹⁸ , Hatakeyama,S.¹⁸ , Iwamoto,T.¹⁸ ,
Koga,M.¹⁸ , Maruyama,T.¹⁸ , Ogawa,H.¹⁸ , Shirai,J.¹⁸ , Suzuki,A.¹⁸ , Tsushima,F.¹⁸ , Koshiba,M.¹⁹ ,
Nemoto,M.²⁰ , Nishijima,K.²⁰ , Futagami,T.²¹ , Hayato,Y.²¹ , Kanaya,Y.²¹ , Kaneyuki,K.²¹ ,
Watanabe,Y.²¹ , Kielczewska,D.²² , Doyle,R.A.²³ , George,J.S.²³ , Stachyra,A.L.²³ , Wai,L.L.²³ ,
Wilkes,R.J.²³ , Young,K.K.²³

¹*Institute for Cosmic Ray Research, University of Tokyo, Tanashi, Tokyo 188-8502, Japan*

²*Department of Physics, Boston University, Boston, MA 02215, USA*

³*Physics Department, Brookhaven National Laboratory, Upton, NY 11973, USA*

⁴*Department of Physics and Astronomy, University of California, Irvine, Irvine, CA 92697-4575, USA*

⁵*Department of Physics, California State University, Dominguez Hills, Carson, CA 90747, USA*

⁶*Department of Physics, George Mason University, Fairfax, VA 22030, USA*

⁷*Department of Physics, Gifu University, Gifu, Gifu 501-1193, Japan*

⁸*Department of Physics and Astronomy, University of Hawaii, Honolulu, HI 96822, USA*

⁹*Institute of Particle and Nuclear Studies, High Energy Accelerator Research Organization (KEK), Tsukuba, Ibaraki 305-0801, Japan*

¹⁰*Department of Physics, Kobe University, Kobe, Hyogo 657-8501, Japan*

¹¹*Physics Division, P23, Los Alamos National Laboratory, Los Alamos, NM 87544, USA*

¹²*Department of Physics and Astronomy, Louisiana State University, Baton Rouge, LA 70803, USA*

¹³*Department of Physics, University of Maryland, College Park, MD 20742, USA*

¹⁴*Department of Physics and Astronomy, State University of New York, Stony Brook, NY 11794-3800, USA*

¹⁵*Department of Physics, Niigata University, Niigata, Niigata 950-2181, Japan*

¹⁶*Department of Physics, Osaka University, Toyonaka, Osaka 560-0043, Japan*

¹⁷*Department of Physics, Seoul National University, Seoul, 151-742, Korea*

¹⁸*Department of Physics, Tohoku University, Sendai, Miyagi 980-8578, Japan*

¹⁹*The University of Tokyo, Tokyo 113-0033, Japan*

²⁰*Department of Physics, Tokai University, Hiratsuka, Kanagawa 259-1292, Japan*

²¹*Department of Physics, Tokyo Institute of Technology, Meguro, Tokyo 152-8551, Japan*

²²*Institute of Experimental Physics, Warsaw University, 00-681 Warsaw, Poland*

²³*Department of Physics, University of Washington, Seattle, WA 98195-1560, USA*