

IceCube COLLABORATION

R. Abbasi²⁴, Y. Abdou¹⁸, M. Ackermann³⁶, J. Adams¹³, J. Aguilar²⁴, M. Ahlers²⁸, K. Andeen²⁴, J. Auffenberg³⁵, X. Bai²⁷, M. Baker²⁴, S. W. Barwick²⁰, R. Bay⁷, J. L. Bazo Alba³⁶, K. Beattie⁸, J. J. Beatty^{15,16}, S. Bechet¹⁰, J. K. Becker¹⁷, K.-H. Becker³⁵, M. L. Benabderrahmane³⁶, J. Berdermann³⁶, P. Berghaus²⁴, D. Berley¹⁴, E. Bernardini³⁶, D. Bertrand¹⁰, D. Z. Besson²², M. Bissok¹, E. Blaufuss¹⁴, D. J. Boersma²⁴, C. Bohm³⁰, J. Bolmont³⁶, S. Böser³⁶, O. Botner³³, L. Bradley³², J. Braun²⁴, D. Breder³⁵, T. Castermans²⁶, D. Chirkin²⁴, B. Christy¹⁴, J. Clem²⁷, S. Cohen²¹, D. F. Cowen^{32,31}, M. V. D'Agostino⁷, M. Danninger³⁰, C. T. Day⁸, C. De Clercq¹¹, L. Demirörs²¹, O. Depaepe¹¹, F. Descamps¹⁸, P. Desiati²⁴, G. de Vries-Uiterweerd¹⁸, T. DeYoung³², J. C. Diaz-Velez²⁴, J. Dreyer¹⁷, J. P. Dumm²⁴, M. R. Duvoort³⁴, W. R. Edwards⁸, R. Ehrlich¹⁴, J. Eisich²⁴, R. W. Ellsworth¹⁴, O. Engdegård³³, S. Euler¹, P. A. Evenson²⁷, O. Fadiran⁴, A. R. Fazely⁶, T. Feusels¹⁸, K. Filimonov⁷, C. Finley²⁴, M. M. Foerster³², B. D. Fox³², A. Franckowiak⁹, R. Franke³⁶, T. K. Gaisser²⁷, J. Gallagher²³, R. Ganugapati²⁴, L. Gerhardt^{8,7}, L. Gladstone²⁴, A. Goldschmidt⁸, J. A. Goodman¹⁴, R. Gozzini²⁵, D. Grant³², T. Griesel²⁵, A. Groß^{13,19}, S. Grullon²⁴, R. M. Gunasingha⁶, M. Gurtner³⁵, C. Ha³², A. Hallgren³³, F. Halzen²⁴, K. Han¹³, K. Hanson²⁴, Y. Hasegawa¹², J. Heise³⁴, K. Helbing³⁵, P. Herquet²⁶, S. Hickford¹³, G. C. Hill²⁴, K. D. Hoffman¹⁴, K. Hoshina²⁴, D. Hubert¹¹, W. Huelsnitz¹⁴, J.-P. Hülf¹, P. O. Hulth³⁰, K. Hultqvist³⁰, S. Hussain²⁷, R. L. Imlay⁶, M. Inaba¹², A. Ishihara¹², J. Jacobsen²⁴, G. S. Japaridze⁴, H. Johansson³⁰, J. M. Joseph⁸, K.-H. Kampert³⁵, A. Kappes^{24,a}, T. Karg³⁵, A. Karle²⁴, J. L. Kelley²⁴, P. Kenny²², J. Kiryluk^{8,7}, F. Kislat³⁶, S. R. Klein^{8,7}, S. Klepser³⁶, S. Knops¹, G. Kohnen²⁶, H. Kolanoski⁹, L. Köpke²⁵, M. Kowalski⁹, T. Kowarik²⁵, M. Krasberg²⁴, K. Kuehn¹⁵, T. Kuwabara²⁷, M. Labare¹⁰, S. Lafebre³², K. Laihem¹, H. Landsman²⁴, R. Lauer³⁶, H. Leich³⁶, D. Lennarz¹, A. Lucke⁹, J. Lundberg³³, J. Lünemann²⁵, J. Madsen²⁹, P. Majumdar³⁶, R. Maruyama²⁴, K. Mase¹², H. S. Matis⁸, C. P. McParland⁸, K. Meagher¹⁴, M. Merck²⁴, P. Mészáros^{31,32}, E. Middell³⁶, N. Milke¹⁷, H. Miyamoto¹², A. Mohr⁹, T. Montaruli^{24,b}, R. Morse²⁴, S. M. Movit³¹, K. Münich¹⁷, R. Nahnhauer³⁶, J. W. Nam²⁰, P. Nießen²⁷, D. R. Nygren^{8,30}, S. Odrowski¹⁹, A. Olivas¹⁴, M. Olivo³³, M. Ono¹², S. Panknin⁹, S. Patton⁸, C. Pérez de los Heros³³, J. Petrovic¹⁰, A. Piegza²⁵, D. Pieloth³⁶, A. C. Pohl^{33,c}, R. Porrata⁷, N. Potthoff³⁵, P. B. Price⁷, M. Prikockis³², G. T. Przybylski⁸, K. Rawlins³, P. Redl¹⁴, E. Resconi¹⁹, W. Rhode¹⁷, M. Ribordy²¹, A. Rizzo¹¹, J. P. Rodrigues²⁴, P. Roth¹⁴, F. Rothmaier²⁵, C. Rott¹⁵, C. Roucelle¹⁹, D. Rutledge³², D. Ryckbosch¹⁸, H.-G. Sander²⁵, S. Sarkar²⁸, K. Satalecka³⁶, S. Schlenstedt³⁶, T. Schmidt¹⁴, D. Schneider²⁴, A. Schukraft¹, O. Schulz¹⁹, M. Schunck¹, D. Seckel²⁷, B. Semburg³⁵, S. H. Seo³⁰, Y. Sestayo¹⁹, S. Seunarine¹³, A. Silvestri²⁰, A. Slipak³², G. M. Spiczak²⁹, C. Spiering³⁶, M. Stamatikos¹⁵, T. Stanev²⁷, G. Stephens³², T. Stezelberger⁸, R. G. Stokstad⁸, M. C. Stoufer⁸, S. Stoyanov²⁷, E. A. Strahler²⁴, T. Straszheim¹⁴, K.-H. Sulanke³⁶, G. W. Sullivan¹⁴, Q. Swillens¹⁰, I. Taboada⁵, O. Tarasova³⁶, A. Tepe³⁵, S. Ter-Antonyan⁶, C. Terranova²¹, S. Tilav²⁷, M. Tluczykont³⁶, P. A. Toale³², D. Tosi³⁶, D. Turčan¹⁴, N. van Eijndhoven³⁴, J. Vandenbergroucke⁷, A. Van Overloop¹⁸, B. Voigt³⁶, C. Walck³⁰, T. Waldenmaier⁹, M. Walter³⁶, C. Wendt²⁴, S. Westerhoff²⁴, N. Whitehorn²⁴, C. H. Wiebusch¹, A. Wiedemann¹⁷, G. Wikström³⁰, D. R. Williams², R. Wischnewski³⁶, H. Wissing^{1,14}, K. Woschnagg⁷, X. W. Xu⁶, G. Yodh²⁰, S. Yoshida¹²

¹*III Physikalisches Institut, RWTH Aachen University, D-52056 Aachen, Germany*²*Dept. of Physics and Astronomy, University of Alabama, Tuscaloosa, AL 35487, USA*³*Dept. of Physics and Astronomy, University of Alaska Anchorage, 3211 Providence Dr., Anchorage, AK 99508, USA*⁴*CTSPS, Clark-Atlanta University, Atlanta, GA 30314, USA*⁵*School of Physics and Center for Relativistic Astrophysics, Georgia Institute of Technology, Atlanta, GA 30332, USA*⁶*Dept. of Physics, Southern University, Baton Rouge, LA 70813, USA*⁷*Dept. of Physics, University of California, Berkeley, CA 94720, USA*⁸*Lawrence Berkeley National Laboratory, Berkeley, CA 94720, USA*⁹*Institut für Physik, Humboldt-Universität zu Berlin, D-12489 Berlin, Germany*¹⁰*Université Libre de Bruxelles, Science Faculty CP230, B-1050 Brussels, Belgium*¹¹*Vrije Universiteit Brussel, Dienst ELEM, B-1050 Brussels, Belgium*¹²*Dept. of Physics, Chiba University, Chiba 263-8522, Japan*

¹³*Dept. of Physics and Astronomy, University of Canterbury, Private Bag 4800, Christchurch, New Zealand*

¹⁴*Dept. of Physics, University of Maryland, College Park, MD 20742, USA*

¹⁵*Dept. of Physics and Center for Cosmology and Astro-Particle Physics, Ohio State University, Columbus, OH 43210, USA*

¹⁶*Dept. of Astronomy, Ohio State University, Columbus, OH 43210, USA*

¹⁷*Dept. of Physics, TU Dortmund University, D-44221 Dortmund, Germany*

¹⁸*Dept. of Subatomic and Radiation Physics, University of Gent, B-9000 Gent, Belgium*

¹⁹*Max-Planck-Institut für Kernphysik, D-69177 Heidelberg, Germany*

²⁰*Dept. of Physics and Astronomy, University of California, Irvine, CA 92697, USA*

²¹*Laboratory for High Energy Physics, École Polytechnique Fédérale, CH-1015 Lausanne, Switzerland*

²²*Dept. of Physics and Astronomy, University of Kansas, Lawrence, KS 66045, USA*

²³*Dept. of Astronomy, University of Wisconsin, Madison, WI 53706, USA*

²⁴*Dept. of Physics, University of Wisconsin, Madison, WI 53706, USA*

²⁵*Institute of Physics, University of Mainz, Staudinger Weg 7, D-55099 Mainz, Germany*

²⁶*University of Mons-Hainaut, 7000 Mons, Belgium*

²⁷*Bartol Research Institute and Department of Physics and Astronomy, University of Delaware, Newark, DE 19716, USA*

²⁸*Dept. of Physics, University of Oxford, 1 Keble Road, Oxford OX1 3NP, UK*

²⁹*Dept. of Physics, University of Wisconsin, River Falls, WI 54022, USA*

³⁰*Oskar Klein Centre and Dept. of Physics, Stockholm University, SE-10691 Stockholm, Sweden*

³¹*Dept. of Astronomy and Astrophysics, Pennsylvania State University, University Park, PA 16802, USA*

³²*Dept. of Physics, Pennsylvania State University, University Park, PA 16802, USA*

³³*Dept. of Physics and Astronomy, Uppsala University, Box 516, S-75120 Uppsala, Sweden*

³⁴*Dept. of Physics and Astronomy, Utrecht University/SRON, NL-3584 CC Utrecht, The Netherlands*

³⁵*Dept. of Physics, University of Wuppertal, D-42119 Wuppertal, Germany*

³⁶*DESY, D-15735 Zeuthen, Germany*

^a*affiliated with Universität Erlangen-Nürnberg, Physikalisches Institut, D-91058, Erlangen, Germany*

^b*on leave of absence from Università di Bari and Sezione INFN, Dipartimento di Fisica, I-70126, Bari, Italy*

^c*affiliated with School of Pure and Applied Natural Sciences, Kalmar University, S-39182 Kalmar, Sweden*

Acknowledgments

We acknowledge the support from the following agencies: U.S. National Science Foundation-Office of Polar Program, U.S. National Science Foundation-Physics Division, University of Wisconsin Alumni Research Foundation, U.S. Department of Energy, and National Energy Research Scientific Computing Center, the Louisiana Optical Network Initiative (LONI) grid computing resources; Swedish Research Council, Swedish Polar Research Secretariat, and Knut and Alice Wallenberg Foundation, Sweden; German Ministry for Education and Research (BMBF), Deutsche Forschungsgemeinschaft (DFG), Germany; Fund for Scientific Research (FNRS-FWO), Flanders Institute to encourage scientific and technological research in industry (IWT), Belgian Federal Science Policy Office (Belspo); the Netherlands Organisation for Scientific Research (NWO); M. Ribordy acknowledges the support of the SNF (Switzerland); A. Kappes and A. Groß acknowledge support by the EU Marie Curie OIF Program; J. P. Rodrigues acknowledge support by the Capes Foundation, Ministry of Education of Brazil.

1339: IceCube

Albrecht Karle, for the IceCube Collaboration (Highlight paper)

0653: All-Sky Point-Source Search with 40 Strings of IceCube

Jon Dumm, Juan A. Aguilar, Mike Baker, Chad Finley, Teresa Montaruli, for the IceCube Collaboration

0812: IceCube Time-Dependent Point Source Analysis Using Multiwavelength Information

M. Baker, J. A. Aguilar, J. Braun, J. Dumm, C. Finley, T. Montaruli, S. Odrowski, E. Resconi for the IceCube Collaboration

0960: Search for neutrino flares from point sources with IceCube (0908.4209)

J. L. Bazo Alba, E. Bernardini, R. Lauer, for the IceCube Collaboration

0987: Neutrino triggered high-energy gamma-ray follow-up with IceCube

Robert Franke, Elisa Bernardini for the IceCube collaboration

1173: Moon Shadow Observation by IceCube

D.J. Boersma, L. Gladstone and A. Karle for the IceCube Collaboration

1289: IceCube/AMANDA combined analyses for the search of neutrino sources at low energies

Cécile Roucelle, Andreas Gross, Sirin Odrowski, Elisa Resconi, Yolanda Sestayo

1127: AMANDA 7-Year Multipole Analysis (0906.3942)

Anne Schukraft, Jan-Patrick Hülß for the IceCube Collaboration

1418: Measurement of the atmospheric neutrino energy spectrum with IceCube

Dmitry Chirkin for the IceCube collaboration

0785: Atmospheric Neutrino Oscillation Measurements with IceCube

Carsten Rott for the IceCube Collaboration

1565: Direct Measurement of the Atmospheric Muon Energy Spectrum with IceCube (0909.0679)

Patrick Berghaus for the IceCube Collaboration

1400: Search for Diffuse High Energy Neutrinos with IceCube

Kotoyo Hoshina for the IceCube collaboration

1311: A Search For Atmospheric Neutrino-Induced Cascades with IceCube

(0910.0215) Michelangelo D'Agostino for the IceCube Collaboration

0882: First search for extraterrestrial neutrino-induced cascades with IceCube

(0909.0989) Joanna Kiryluk for the IceCube Collaboration

0708: Improved Reconstruction of Cascade-like Events in IceCube
Eike Middell, Joseph McCartin and Michelangelo D'Agostino for the IceCube Collaboration

1221: Searches for neutrinos from GRBs with the IceCube 22-string detector and sensitivity estimates for the full detector
A. Kappes, P. Roth, E. Strahler, for the IceCube Collaboration

0515: Search for neutrinos from GRBs with IceCube
K. Meagher, P. Roth, I. Taboada, K. Hoffman, for the IceCube Collaboration

0393: Search for GRB neutrinos via a (stacked) time profile analysis
Martijn Duvoort and Nick van Eijndhoven for the IceCube collaboration

0764: Optical follow-up of high-energy neutrinos detected by IceCube (0909.0631)
Anna Franckowiak, Carl Akerlof, D. F. Cowen, Marek Kowalski, Ringo Lehmann, Torsten Schmidt and Fang Yuan for the IceCube Collaboration and for the ROTSE Collaboration

0505: Results and Prospects of Indirect Searches for Dark Matter with IceCube
Carsten Rott and Gustav Wikström for the IceCube collaboration

1356: Search for the Kaluza-Klein Dark Matter with the AMANDA/IceCube Detectors (0906.3969), Matthias Danninger & Kahae Han for the IceCube Collaboration

0834: Searches for WIMP Dark Matter from the Sun with AMANDA (0906.1615)
James Braun and Daan Hubert for the IceCube Collaboration

0861: The extremely high energy neutrino search with IceCube
Keiichi Mase, Aya Ishihara and Shigeru Yoshida for the IceCube Collaboration

0913: Study of very bright cosmic-ray induced muon bundle signatures measured by the IceCube detector
Aya Ishihara for the IceCube Collaboration

1198: Search for High Energetic Neutrinos from Supernova Explosions with AMANDA (0907.4621)
Dirk Lennarz and Christopher Wiebusch for the IceCube Collaboration

0549: Search for Ultra High Energy Neutrinos with AMANDA
Andrea Silvestri for the IceCube Collaboration

1372: Selection of High Energy Tau Neutrinos in IceCube
Seon-Hee Seo and P. A. Toale for the IceCube Collaboration

0484: Search for quantum gravity with IceCube and high energy atmospheric neutrinos, Warren Huelsnitz & John Kelley for the IceCube Collaboration

0970: A First All-Particle Cosmic Ray Energy Spectrum From IceTop

Fabian Kislat, Stefan Klepser, Hermann Kolanoski and Tilo Waldenmaier for the IceCube Collaboration

0518: Reconstruction of IceCube coincident events and study of composition-sensitive observables using both the surface and deep detector

Tom Feusels, Jonathan Eisch and Chen Xu for the IceCube Collaboration

0737: Small air showers in IceTop

Bakhtiyor Ruzybayev, Shahid Hussain, Chen Xu and Thomas Gaisser for the IceCube Collaboration

1429: Cosmic Ray Composition using SPASE-2 and AMANDA-II

K. Andeen and K. Rawlins For the IceCube Collaboration

0519: Study of High pT Muons in IceCube (0909.0055)

Lisa Gerhardt and Spencer Klein for the IceCube Collaboration

1340: Large Scale Cosmic Rays Anisotropy With IceCube (0907.0498)

Rasha U Abbasi, Paolo Desiati and Juan Carlos Velez for the IceCube Collaboration

1398: Atmospheric Variations as observed by IceCube

Serap Tilav, Paolo Desiati, Takao Kuwabara, Dominick Rocco, Florian Rothmaier, Matt Simmons, Henrike Wissing for the IceCube Collaboration

1251: Supernova Search with the AMANDA / IceCube Detectors (0908.0441)

Thomas Kowarik, Timo Griesel, Alexander Piégsa for the IceCube Collaboration

1352: Physics Capabilities of the IceCube DeepCore Detector (0907.2263)

Christopher Wiebusch for the IceCube Collaboration

1336: Fundamental Neutrino Measurements with IceCube DeepCore

Darren Grant, D. Jason Koskinen, and Carsten Rott for the IceCube collaboration

1237: Implementation of an active veto against atmospheric muons in IceCube DeepCore

Olaf Schulz, Sebastian Euler and Darren Grant for the IceCube Collaboration

1293: Acoustic detection of high energy neutrinos in ice: Status and results from the South Pole Acoustic Test Setup (0908.3251 – revised)

Freija Descamps for the IceCube Collaboration

0903: Sensor development and calibration for acoustic neutrino detection in ice (0907.3561)

Timo Karg, Martin Bissok, Karim Laihem, Benjamin Semburg, and Delia Tosi for the IceCube collaboration

PAPERS RELATED TO ICECUBE

0466: A new method for identifying neutrino events in IceCube data

Dmitry Chirkin

0395: Muon Production of Hadronic Particle Showers in Ice and Water

Sebastian Panknin, Julien Bolmont, Marek Kowalski and Stephan Zimmer

0642: Muon bundle energy loss in deep underground detector

Xinhua Bai, Dmitry Chirkin, Thomas Gaisser, Todor Stanev and David Seckel

0542: Constraints on Neutrino Interactions at energies beyond 100 PeV with Neutrino Telescopes

Shigeru Yoshida

0006: Constraints on Extragalactic Point Source Flux from Diffuse Neutrino Limits

Andrea Silvestri and Steven W. Barwick

0418: Study of electromagnetic backgrounds in the 25-300 MHz frequency band at the South Pole

Jan Auffenberg, Dave Bessony, Tom Gaisser, Klaus Helbing, Timo Karg, Albrecht Karle, and Ilya Kravchenko

0238: Neutrino signal from -ray loud binaries powered by high-energy protons

Andrii Neronov and Mathieu Ribordy

0249: Acoustic sensor development for ultra high energy neutrino detection

Matt Podgorski and Mathieu Ribordy