

## Biographical Sketch: Marvin L. Marshak

### a. Professional Preparation

A.B. (Physics)—Cornell University, Ithaca, NY, 1967

M.S. and Ph.D. (Physics)—University of Michigan, Ann Arbor, MI, 1969 and 1970

Postdoctoral Research Associate—University of Minnesota, Minneapolis MN, 1970-1974

### b. Appointments

Morse-Alumni Distinguished Teaching Professor of Physics, University of Minnesota, 1996-present

Director of Residential College, University of Minnesota, 1994-1996, 1997-present

Faculty Legislative Liaison, University of Minnesota, 1997-present

Senior Vice-President for Academic Affairs, University of Minnesota, 1996-1997

Head, School of Physics and Astronomy, University of Minnesota, 1986-1996

Professor of Physics, University of Minnesota, 1983-1996

Director of Graduate Studies in Physics, University of Minnesota, 1983-1986

Associate Professor Physics, University of Minnesota, 1978-1983

Assistant Professor of Physics, University of Minnesota, 1974-1978

### c(i). Related Publications

1. *SEARCH FOR NUCLEON DECAY WITH FINAL STATES LEPTON+  $\bar{\nu}_e$ , ANTI-NEUTRINO  $\bar{\nu}_e$ , AND ANTI-NEUTRINO  $\bar{\nu}_e + 0$  USING SOUDAN-2.* Soudan 2 Collaboration (D. Wall *et al.*). **Phys.Rev.D62:092003,2000**

2. *SEARCH FOR NUCLEON DECAY INTO LEPTON +  $K^0$  FINAL STATES USING SOUDAN-2.*

By Soudan 2 Collaboration (D. Wall *et al.*). **Phys.Rev.D61:072004,2000**

3. *THE OBSERVATION OF A SHADOW OF THE MOON IN THE UNDERGROUND MUON FLUX IN THE SOUDAN-2 DETECTOR.* By Soudan 2 Collaboration (J.H. Cobb *et al.*). **Phys.Rev.D61:092002,2000**

4. *THE ATMOSPHERIC NEUTRINO FLAVOR RATIO FROM A 3.9 FIDUCIAL KILOTON YEAR EXPOSURE OF SOUDAN-2.* By Soudan-2 Collaboration (W.W.M. Allison *et al.*). **Phys.Lett.B449:137-144,1999**

5. *SEARCH FOR THE PROTON DECAY MODE PROTON TO NEUTRINO  $K^+$  IN SOUDAN-2.*

By Soudan-2 Collaboration (W.W.M. Allison *et al.*). **Phys.Lett.B427:217-224,1998**

### c(ii). Other Publications

1. *THE LARGE MOMENTUM TRANSFER REACTION  $C-12(P,2P + N)$  AS A NEW METHOD FOR MEASURING SHORT RANGE  $NN$  CORRELATIONS IN NUCLEI.* By J. Aclander, J. Alster, D. Barton, G. Bunce, A. Carroll, N. Christensen, H. Courant, S. Durrant, S. Gushue, S. Heppelmann, E. Kosonovsky, I. Mardor, Y. Mardor, M. Marshak, Y. Makdisi, E.D. Minor, I. Navon, H. Nicholson, E. Piasetzky, T. Roser, J. Russell, M. Sargsian, C.S. Sutton, M. Tanaka, C. White, J.Y. Wu (Tel Aviv U. & Brookhaven & Minnesota U. & Penn State U. & Mount Holyoke Coll. & Massachusetts U., North Dartmouth). 1999. **Phys.Lett.B453:211-216,1999**

2. *SEARCH FOR THE PROTON DECAY MODE PROTON TO NEUTRINO  $K^+$  IN SOUDAN-2.*

By Soudan-2 Collaboration (W.W.M. Allison *et al.*). **Phys.Lett.B427:217-224,1998**

3. *MEASUREMENT OF QUASIELASTIC  $C-12 (P, 2P)$  SCATTERING AT HIGH MOMENTUM TRANSFER.* By Y. Mardor, J. Aclander, J. Alster (Tel Aviv U.), D. Barton, G. Bunce, A. Carroll (Brookhaven), N. Christensen, H. Courant (Minnesota U.), S. Durrant, S. Gushue (Brookhaven), S. Heppelmann (Penn State U.), E. Kosonovsky, I. Mardor (Tel Aviv U.), M. Marshak (Minnesota U.), Y. Makdisi (Brookhaven), E.D. Minor (Penn State U.), I. Navon (Tel Aviv U.), H. Nicholson (Mount Holyoke Coll.), E. Piasetzky (Tel Aviv U.), T. Roser (Brookhaven), J. Russell (Massachusetts U., North Dartmouth), C.S. Sutton (Mount Holyoke Coll.), M. Tanaka (Brookhaven), C. White (Minnesota U.), J.Y. Wu (Penn State U.). Oct 1997. **Phys.Lett.B437:257-263,1998**

4. *A STUDY OF COSMIC RAY COMPOSITION IN THE KNEE REGION USING MULTIPLE MUON EVENTS IN THE SOUDAN-2 DETECTOR.* By Soudan-2 Collaboration (S.M.S. Kasahara *et al.*). **Phys.Rev.D55:5282-5294,1997**

5. *MEASUREMENT OF THE ATMOSPHERIC NEUTRINO FLAVOR COMPOSITION IN SOUDAN-2.* By W.W.M. Allison, G.J. Alner, D.S. Ayres, W.L. Barrett, C. Bode, P.M. Border, C.B. Brooks, J.H. Cobb, D.J.A. Cockerill, R.J. Cotton, H. Courant, D.M. Demuth, T.H. Fields, H.R. Gallagher, C. Garcia-Garcia, M.C. Goodman, R.N. Gray, K. Johns, T. Kafka, S.M.S. Kasahara, W. Leeson, P.J. Litchfield, N.P. Longley, M.J. Lowe, W.A. Mann, M.L. Marshak, E.N. May, R.H. Milburn, W.H. Miller, L. Mualem, A. Napier, W. Oliver, G.F. Pearce, D.H. Perkins, E.A. Peterson, D.A. Petyt, L.E. Price, D.M. Roback, K. Ruddick, D. Schmid, J. Schneps, M.H. Schub, R.V. Seidlein, M.A. Shupe, A. Stassinakis, N. Sundaralingam, J. Thomas, J.L. Thron, V. Vasilev, G. Villaume, S.P. Wakely, D. Wall, S.J. Werkema, N. West, U.M. Wielgosz (Argonne & Minnesota U. & Oxford U. & Rutherford & Tufts U. & Western Washington U.). **Phys.Lett.B391:491-500,1997**

#### **d. Synergistic Activities**

- Founded and has directed for six years the University of Minnesota Residential College, a program that now includes 450 undergraduate students and integrates academic and residential activities. Mr. Marshak has taught innovative seminars for Residential College students including *The Art and Science of Color* (jointly with a Studio Arts professor), *The Deep Underground Sky* (neutrinos for the non-expert) and *America Emerges from Isolation: The History of the Manhattan Project*.

- For the past three years represented the 3,000 members of the University of Minnesota faculty in interactions with the Governor and Legislature of Minnesota. In this position, he has promoted public dialogue in Minnesota regarding the balance of access and excellence in public, land-grant, research university higher education.

- Served the University of Minnesota as its Senior Vice-President and Chief Academic Officer during the 1996-1997 conflict between the University Regents and faculty regarding policies on faculty tenure. As part of the solution to this conflict, he publicly articulated the importance of academic freedom to the University of people of Minnesota and the direct link between tenure and academic freedom. He also participated in the management of the University's reorganization of its biological sciences programs and the \$225 million sale of the University Hospital to a non-profit, vertically-integrated health care organization.

- Played a significant role in raising \$4 million to endow a Theoretical Physics Institute, in recruiting outstanding faculty, principally from the Soviet Union, and in organizing the Institute, which has played a major role in the recent development of elementary particle and condensed matter physics. He also raised approximately \$0.5 million to endow the Abigail and John Van Vleck Lectureship in Physics, which has attracted nearly 20 Nobel-laureate lecturers.

- Often served as a Visiting Scientist in K-12 schools, principally in a program sponsored by the Science Museum of Minnesota and the Blandin Foundation.

#### **e(i) Collaborators**

J. Aclander, (Tel-Aviv), Y. Aleshin, (ITEP-Moscow), K. Alexandrov, (Lebedev), W. Allison, (Oxford), J. Alster, (Tel-Aviv), D. Anderson, (Fermilab), C. Arroyo, (Stanford), F. Avignone, (South Carolina), S. Avvakumov, (Stanford), D. Ayres, (Argonne), J. Bahcall, (IAS), B. Baller, (Fermilab), B. Barish, (Caltech), P. Barnes, (Livermore), G. Barr, (Oxford), W. Barrett, (Western Washington), D. Barton, (Brookhaven), R. Bernstein, (Fermilab), G. Bock, (Fermilab), D. Boehlein, (Fermilab), D. Bogert, (Fermilab), P. Border, (Minnesota), C. Bower, (Indiana), L. Buckley-Geer, (Fermilab), G. Bunce, (Brookhaven), A. Byon-Wagner, (Fermilab), F. Calaprice, (Princeton), A. Carroll, (Brookhaven), S. Chernichenko, (Pittsburgh), S. Childress, (Fermilab), B. Choudhary, (Caltech), N. Christensen, (Minnesota), J. Cobb, (Oxford), J. Conrad, (Columbia), D. Cossairt, (Fermilab), H. Courant, (Minnesota), A. De Santo, (Oxford), D. Demuth, (Minnesota), P. Dervan, (UC London), V. Ditlov, (ITEP-Moscow), M. Diwan, (Brookhaven), P. Doe, (U. Washington), S. Durrant, (Brookhaven), R. Edgecock, (Rutherford), O. Egorov, (ITEP-Moscow), A. Erwin, (Wisconsin), D. Fassouliotis, (Athens), G. Feldman, (Harvard), T. Fields, (Argonne), T. Gaisser, (Bartol), H. Gallagher, (Minnesota), A. Golutvin, (ITEP-Moscow), M. Goodman, (Argonne), N. Grossman, (Fermilab), V. Gudkov, (South Carolina), S. Gushue, (Brookhaven), Y. Gutnikov, (Pittsburgh), A. Habig, (UM Duluth), D. Harris, (Fermilab), E. Harris, (Sussex), P. Harris, (Sussex), E. Hartouni, (Livermore), R. Hatcher, (Stanford), W. Haxton (U. Washington), R. Heinz, (Indiana), K. Heller, (Minnesota), S. Heppelmann, (Penn State), Y. Huang, (Caltech), J. Huyen, (Fermilab), M. Ignatenko, (Fermilab), G. Irwin, (Stanford), C. James, (Fermilab), T. Joffe-Minor, (Argonne), D. Johnson, (Fermilab), T. Kafka, (Tufts), S. Kasahara, (Minnesota), E. Katsavounidis, (Caltech), V. Khovanski, (ITEP-Moscow), H. Kim, (Caltech), V. Kochetkov, (ITEP-Moscow), G. Koizumi, (Fermilab), S. Kopp, (Texas-Austin), E. Kosonovsky, (Tel Aviv), M. Kostin, (Texas-Austin), D. Krakauer, (Argonne), A. Kulik, (Pittsburgh), K. Lang, (Texas-Austin), R. Lee, (Harvard), K. Lesko, (LBNL), P. Litchfield, (Rutherford), J. Liu, (Beijing), J. Liu, (Texas-Austin), N. Longley, (Macalster), P. Lucas, (Fermilab), Y. Makdisi, (Brookhaven), V. Makeev, (Fermilab), W. Mann, (Tufts), A. Marchionni, (Fermilab), I. Mardor, (Tel Aviv), Y. Mardor, (Tel-Aviv), J. McDonald, (Pittsburgh), E. Melnikov, (Pittsburgh), G. Merson, (Lebedev), M. Messier, (Harvard), D. Michael, (Caltech), R. Milburn, (Tufts), L. Miller, (James Madison), E. Minor, (Penn State), S. Mishra, (South Carolina), J. Morfin, (Fermilab), L. Muale, (Minnesota), S. Mufson, (Indiana), M. Murtagh, (Brookhaven), J. Musser, (Indiana), A. Napier, (Tufts), D. Naples, (Pittsburgh), I. Navon, (Tel Aviv), C. Nelson, (Fermilab), J. Nelson, (Minnesota), H. Newman, (Caltech), F. Nezrick, (Fermilab), H. Nicholson, (Mt. Holyoke), W. Oliver, (Tufts), V. Onuchin, (Pittsburgh), V. Paolone, (Pittsburgh), A. Para, (Fermilab), T. Patzak, (Tufts), G. Pearce, (Rutherford), C. Peck, (Caltech), E. Peterson, (Minnesota), D. Petyt, (Rutherford), K. Phillips, (Macalster), E. Piasetzky, (Tel Aviv), A. Pla-Dalmau, (Fermilab), R. Plunkett, (Fermilab), E. Pozharova, (ITEP-Moscow), L. Price, (Argonne), G. Rameika, (Fermilab), A. Read, (Fermilab), D. Reyna, (Argonne), K. Robinson, (LBNL), C. Rosenfeld, (South Carolina), T. Roser, (Brookhaven), K. Ruddick, (Minnesota), J. Russell, (U. Massachusetts), V. Ryabov, (Lebedev), R. Saakyan, (UC London), B. Sadoulet (UCB), J. Schneps, (Tufts), P. Schoessow, (Argonne), V. Semenov, (Pittsburgh), V. Shamanov, (ITEP-Moscow), W. Smart, (Fermilab), V. Smirinsky, (ITEP-Moscow), P. Smith, (Sussex), V. Smotriaev, (ITEP-Moscow), H. Sobel (UCI), N. Solomey, (IIT), R. Soltz, (Livermore), N. Starkov, (Lebedev), C. Sutton, (Mt. Holyoke), R. Talaga, (Argonne), M. Tanaka, (Brookhaven), E. Tetteh-Larkey, (Texas A&M), J. Thomas, (UC London), M. Thomson, (Cambridge), J. Thron, (Argonne), N. Tobien, (Fermilab), D. Tovee, (UC London), I. Trostin, (ITEP-Moscow), V. Tsarev, (Lebedev), G. Tzanakos, (Athens), G. Unel, (Northwestern), J. Urheim, (Minnesota), A. Usachev, (Pittsburgh), M. Vassiliou, (Athens), M. Velasco, (Northwestern), C. Velissaris, (Wisconsin), V. Verbyusov, (ITEP-Moscow), B. Viren, (Brookhaven), L. Wai, (Stanford), J. Wang, (LBNL), C. Ward, (Cambridge), D. Ward, (Cambridge), D. Wark, (Rutherford), R. Webb, (Texas A&M), A. Weber, (Oxford), A. Wehmann, (Fermilab), N. West, (Oxford), C. White, (IIT), M. Wiescher (Notre Dame), J. Wilkerson, (U. Washington), R. Winston, (Chicago), S. Wojcicki, (Stanford), D. Wright, (Livermore), J. Wu, (Penn State), X. Xia, (Beijing), J. Yun, (Fermilab)

**e(ii) Graduate and Post-doctoral Advisors:** Alan Krisch (U. Michigan); Keith Ruddick (U. Minnesota)

**e(iii) Thesis Students:** 15 overall; last 5 years: David DeMuth, University of Minnesota-Crookston, Hugh Gallagher, University of Minnesota; **Post-doctoral Scholar Sponsor:** 5 overall; none in last 5 years