



# Contents

## I. Introduction

- Landau and the Frontiers of Physics* 3  
by E. Gotsman, Y. Ne'eman and A. Voronel

## II. Historical

- With Lev Landau in his Boyhood Days* 13  
by Y. Ben-Yonatan and S. Avitsur

- Letters written by Academician P. Kapitza which appeared in  
Ogonyok* 17

- Exchange of letters between Landau–Lieberman and  
Ne'eman–Robinson which appeared in the New York Times* 21

- Landau in the 1930s* 23  
by R. Peierls

- Reminiscences of Landau* 27  
by N. Meiman

- Reminiscences of the Landau Seminar 1957/58* 31  
by M. E. Mayer

- My Life with Landau* 43  
by N. D. Mermin

- Landau's Work on Quantum Field Theory and High-Energy  
Physics (1930–61)* 53  
by L. Brown and H. Rechenberg

- Lev Davidovich Landau: Some Aspects of his Life and  
Personality* 83  
by J. Mehra

- To be a Student of Landau* 91  
by M. Azbel

**III.    Particles and Fields**

<i>Chasing the Landau Ghost</i> by D. Gross	97
<i>Quantum Groups</i> by L. D. Faddeev	113
<i>Future Accelerators and Experiments</i> by B. Richter	121
<i>Level One Kac–Moody Characters and Modular Invariance</i> by C. Itzykson	145
<i>Conserved Currents in Weak Interactions</i> by E. C. G. Sudarshan and R. E. Marshak	169
<i>Scattering Theory in Quaternionic Quantum Mechanics and T-violation</i> by S. L. Adler	183

**IV.    Condensed Matter**

<i>Phase Transitions and Fluctuations in Less than Three Dimensions</i> by M. E. Fisher	195
<i>On the Rigorous Derivation of Hydrodynamical Equations from Stochastic Lattice Gas Models</i> by J. L. Lebowitz	207
<i>Recent Experiments near the Superfluid Transition in <math>^4\text{He}</math></i> by G. Ahlers and R. V. Duncan	219
<i>Quantum Transport in Very Small Normal Metal Devices</i> by R. A. Webb	239
<i>Tunnelling and Evaporation Breakdown</i> by M. Azbel	269
<i>Discontinuous Symmetry Breaking</i> by I. Dzyaloshinskii	279
<i>Turbulence, Coherence and Topology</i> by E. Levich and L. Shtilman	289
<i>Rotons in Liquid Helium and the Fractionally Charged Quantum Hall Effect</i> by P. M. Platzman	293
<i>Limit Lognormal Multifractal Measures</i> by B. B. Mandelbrot	309



	Contents	ix
<b>V. Astronomy and Astrophysics</b>		
<i>Yakov Zel'dovich and Modern Cosmology</i> by P. J. E. Peebles		343
<i>Supernova 1987A</i> by S. E. Woosley		359
<i>Neutron Stars: A Cosmic Hadron Physics Laboratory</i> by D. Pines		381
<b>ABSTRACTS</b>		399
<b>INDEX</b>		423