

TABLE OF CONTENTS

FOREWORD	ix
LIST OF PARTICIPANTS	xiii
INTRODUCTORY REVIEW / A. Hewish	1
I. ELECTRODYNAMICS OF THE PULSAR MAGNETOSPHERE AND WAVE ZONE	7
Structure of the Pulsar Magnetosphere / L. Mestel	9
The Axially Symmetric Wind Magnetosphere / R. Schmalz, C. Herold, H. Herold and H. Ruder	25
A New Formulation of the Equations Governing the Pulsar Magnetosphere / E. Schrüfer	27
The Electric Fields in Nonneutral Beam Models of Pulsar Magnetospheres / D.F. Smith, L.A. Muth and J. Arons	29
Pulsar Electrodynamics / H. Ardavan	31
e^+e^- Annihilation in Strong Magnetic Fields / G. Wunner, H. Herold and H. Ruder	35
Plasma Distribution Near Pulsars / F.C. Michel and R. Pellat	37
Electric Field Near a Rotating Neutron Star / A.I. Tsygan	47
Hot Relativistic Winds and the Crab Nebula / F.S. Fujimura and C.F. Kennel	51
Propagation of Large Amplitude Pulsar Waves / E. Asséo, X. Llobet and R. Pellat	53
Pulsar Winds / W. Kundt	57
II. RADIO EMISSION MECHANISM	67
The Slot Gap Model of Pulsars / J. Arons	69
Evolution and Radiation in Pulsar Polar Cap Models / M. Ruderman	87
Observational Consequences of Polar Cap Theories / A.F. Cheng	99
The Pulsar Magnetic Window / C.S. Shukre and V. Radhakrishnan	103
The Location, Spectrum and Beamwidth of Pulsar Radiation from Polar Cap Models / B.J. Rickett and J.M. Cordes	107
Pulsar Radio Emission and Bunching Mechanisms / E. Asséo, R. Pellat and H. Sol	111

Radio Observational Constraints on Pulsar Emission Mechanisms / J.M. Cordes	115
Maser Pulse Emission Mechanisms / D.B. Melrose	133
Pulse Emission from the Light Cylinder / D.C. Ferguson	141
Pulsar Electrodynamics: Production of Fast Particles / A.A. da Costa	153
PANEL DISCUSSION:	
From whence the Pulses / D.B. Melrose, J. Arons, J.M. Cordes, D.C. Ferguson, F.D. Kahn and B.J. Rickett	155
III. RADIO OBSERVATIONS OF PULSARS	161
Pulsar Polarization / D.C. Backer	163
Multifrequency Polarization Observations of Integrated Pulse Profiles / P.M. McCulloch, P.A. Hamilton and R.N. Manchester	171
Polar Cap Relief and Integrated Pulse Structure / M. Vivekanand and V. Radhakrishnan	173
Multi Radio Frequency Observations of Pulsars / N. Bartel	177
Simultaneous Multi-Frequency Pulsar Observations / D.J. Thorne	187
Microstructure Crosscorrelation in Pulses Simultaneously Observed at Frequencies Separated by up to 1 GHz / V. Boriakoff and D.C. Ferguson	191
Time Asymmetries in Pulsar Signals / D. Stinebring and J.M. Cordes	197
Pulsar Microstructure Quasi-Periodicity / V. Boriakoff, D.C. Ferguson and G. Slater	199
Pulsar Astrometry / D.C. Backer and R.A. Sramek	205
The Radio Interpulse from PSR 0950+08 / T.H. Hankins and J.M. Cordes	207
PSR 0031-07: The Harmonic Pulsar / G.A.E. Wright and L.A. Fowler	211
Mode-Changing, Drifting Subpulses, and Interpulse Emission in PSR 1822-09 / L.A. Fowler, G.A.E. Wright and D. Morris	213
Some Characteristics of Pulsars with Long Pulse Nulling / Wang Zhen-ru and Chu Yi	215
Radio Radiation Characteristics of Pulsars and Magnetic Dipole Angle / Wang Zhen-ru and Chu Yi	217
IV. OPTICAL RADIATION	219
Optical Observations of Pulsars / F.G. Smith	221
Pulsar Optical Emission as Amplified Synchrotron Emission / R.J. Stoneham	235

V.	X-RAY AND γ -RAY EMISSION	239
	X-ray and Gamma-ray Observations of Pulsars / R. Buccheri	241
	High Energy Gamma Rays from Pulsars / P.N. Bhat, S.K. Gupta, P.V. Ramana Murthy, B.V. Sreekantan, S.C. Tonwar and P.R. Viswanath	251
	On X-ray Pulsar Radiation Mechanisms / V.V. Zheleznyakov	255
	Pulsar Magnetic Field: Spectral Formation in Her X-1 / J. Ventura	263
VI.	PULSE TIMING	265
	Radio Timing Observations / R.N. Manchester	267
	Macroscopic and Microscopic Behavior Following Four Large Jumps in the Vela Pulsar (PSR 0833-45) / G.S. Downs	277
	Pulse Timing and Neutron Star Structure / P.E. Boynton	279
	Glitches, Timing Noise, and Pulsar Thermometry / G. Greenstein	291
	Pulsar Glitches: Superfluid Unpinning / P.W. Anderson, M.A. Alpar, D. Pines and J. Shaham	299
VII.	PROPERTIES OF NEUTRON STARS	301
	Neutron Star Properties from Observations of Pulsars and Pulsing X-ray Sources / F.K. Lamb	303
	Neutron Star Models / V. Canuto and R.L. Bowers	321
	Thermal Properties of Neutron Stars / S. Tsuruta	331
	Cooling of Neutron Stars: Accurate Treatment of Thermal Conduction / N. Itoh, K. Nomoto, S. Tsuruta and T. Murai	339
	Unpulsed X-rays from Pulsars / D.J. Helfand	343
VIII.	NEUTRON STARS IN BINARY SYSTEMS	351
	Masses of Neutron Stars in X-ray Binary Systems / R.L. Kelley and S. Rappaport	353
	The Magnetic Fields and Original Spins of Binary and Runaway Pulsars / F.K. Lamb	357
	Binary Pulsars / J.H. Taylor	361
	Interpretation of Binary Pulsar Observations / R.D. Blandford and W.M. DeCampli	371
	Evolution of Close Binaries and the Formation of Pulsars / E.P.J. van den Heuvel	379
IX.	PULSARS AND SUPERNOVAE	397
	Asymmetric Supernova Explosions: The Origin of Runaway Pulsars and Binary Pulsars / J.-P. de Cuyper	399

Supernovae -- Birthplace of Pulsars? / R.A. Chevalier	403
Pulsar Activity and Supernova Remnant Morphology / V. Radhakrishnan and G. Srinivasan	417
X. GALACTIC DISTRIBUTION OF PULSARS	421
The Galactic Distribution of Pulsars / A.G. Lyne	423
Galactic Distribution and Genesis of Pulsars / O.H. Guseinov and F.K. Kasumov	437
Asymmetries in the Galactic Distribution of Pulsars / A.K. Harding	439
New Observations of HI Absorption for Pulsars / R.N. Manchester, K.J. Wellington and P.M. McCulloch	445
CONCLUDING REVIEW / V. Radhakrishnan	449
OTHER PAPERS PRESENTED AT THE CONFERENCE	455
NAME INDEX	457
SUBJECT INDEX	469

