

CONTENTS

COLLABORATING AUTHORS	x
PREFACE	xi
Part I—INTRODUCTION	
THE SATURN SYSTEM	3
<i>E. C. Stone and T. C. Owen</i>	
SATURN THROUGH THE TELESCOPE: A BRIEF HISTORICAL SURVEY	23
<i>A. Van Helden</i>	
Part II—SATURN	
INTERIOR STRUCTURE OF SATURN	47
<i>W. B. Hubbard and D. J. Stevenson</i>	
COMPOSITION AND CHEMISTRY OF SATURN'S ATMOSPHERE	88
<i>R. G. Prinn, H. P. Larson, J. J. Caldwell, and D. Gautier</i>	
CLOUDS AND AEROSOLS IN SATURN'S ATMOSPHERE	150
<i>M. G. Tomasko, R. A. West, G. S. Orton, and V. G. Teffl</i>	
STRUCTURE AND DYNAMICS OF SATURN'S ATMOSPHERE	195
<i>A. P. Ingersoll, R. F. Beebe, B. J. Conrath, and G. E. Hunt</i>	
THEORY, MEASUREMENTS, AND MODELS OF THE UPPER ATMOSPHERE AND IONOSPHERE OF SATURN	239
<i>S. K. Atreya, J. H. Waite, Jr., T. M. Donahue, A. F. Nagy, and J. C. McConnell</i>	
Part III—MAGNETOSPHERE	
ENERGETIC PARTICLES IN THE INNER MAGNETOSPHERE OF SATURN	281
<i>J. A. Van Allen</i>	

MEASUREMENTS OF PLASMA, PLASMA WAVES, AND SUPRATHERMAL CHARGED PARTICLES IN SATURN'S INNER MAGNETOSPHERE	318
<i>F. L. Scarf, L. A. Frank, D. A. Gurnett, L. J. Lanzerotti, A. Lazarus, and E. C. Sittler, Jr.</i>	
MAGNETIC FIELD MODELS	354
<i>J. E. P. Connerney, L. Davis, Jr., and D. L. Chenette</i>	
SATURN AS A RADIO SOURCE	378
<i>M. L. Kaiser, M. D. Desch, W. S. Kurth, A. Lecacheux, F. Genova, B. M. Pedersen, and D. R. Evans</i>	
THE OUTER MAGNETOSPHERE	416
<i>A. W. Schardt, K. W. Behannon, R. P. Lepping, J. F. Carbary, A. Eviatar, and G. L. Siscoe</i>	
Part IV—RINGS	
SATURN'S RINGS: STRUCTURE, DYNAMICS, AND PAR- TICLE PROPERTIES	463
<i>L. W. Esposito, J. N. Cuzzi, J. B. Holberg, E. A. Marouf, G. L. Tyler, and C. C. Porco</i>	
ELECTRODYNAMIC PROCESSES IN THE RING SYSTEM OF SATURN	546
<i>D. A. Mendis, J. R. Hill, W.-H. Ip, C. K. Goertz, and E. Grün</i>	
Part V—SATELLITES	
ORBITAL RESONANCES AMONG SATURN'S SATELLITES	593
<i>R. Greenberg</i>	
SATELLITES OF SATURN: GEOLOGICAL PERSPECTIVE	609
<i>D. Morrison, T. V. Johnson, E. M. Shoemaker, L. A. Soderblom, P. Thomas, J. Veverka, and B. A. Smith</i>	
SATELLITES OF SATURN: OPTICAL PROPERTIES	640
<i>D. P. Cruikshank, J. Veverka, and L. A. Lebofsky</i>	
Part VI—TITAN	
TITAN	671
<i>D. M. Hunten, M. G. Tomasko, F. M. Flasar, R. E. Samuelson, D. F. Strobel, and D. J. Stevenson</i>	
TITAN'S MAGNETOSPHERIC INTERACTION	760
<i>F. M. Neubauer, D. A. Gurnett, J. D. Scudder, and R. E. Hartle</i>	
ORGANIC MATTER IN THE SATURN SYSTEM	788
<i>C. Sagan, B. N. Khare, and J. S. Lewis</i>	

CONTENTS

ix

Part VII—ORIGIN

ORIGIN AND EVOLUTION OF THE SATURN SYSTEM <i>J. B. Pollack and G. Consolmagno</i>	811
COLOR SECTION, BIBLIOGRAPHY, GLOSSARY, ACKNOWLEDGMENTS, AND INDEX	
COLOR SECTION	867
BIBLIOGRAPHY <i>T. S. Mullin</i>	873
GLOSSARY <i>T. S. Mullin</i>	929
LIST OF CONTRIBUTORS WITH ACKNOWLEDGMENTS TO FUNDING AGENCIES	947
INDEX <i>M. A. Matthews</i>	957