PREFACE *G. García-Segura & E. Ramirez-Ruiz* v

LIST OF PARTICIPANTS vi

MODELS FOR THE CIRCUMSTELLAR MEDIUM OF LONG GAMMA-RAY BURST PROGENITOR CANDIDATES
A. J. van Marle, N. Langer, A. Achterberg, & G. García-Segura 1

THE CIRCUMSTELLAR ENVIRONMENTS OF THE COOL HYPERGIANTS: IMPLICATIONS FOR THE MASS LOSS MECHANISM
R. M. Humphreys 6

RADIO OBSERVATIONS OF SNR ENVIRONMENTS *E. M. Reynoso* 12

MASS LOSS FROM LUMINOUS BLUE VARIABLES AND QUASI-PERIODIC MODULATIONS OF RADIO SUPERNOVAE *J. S. Vink & R. Kotak* 17

SUPERNOVAE AND GAMMA-RAY BURSTS
P. A. Mazzali, K. Nomoto, K. Maeda, & J. Deng 23

ETA CAR AND ITS SURROUNDINGS: THE X-RAY DIAGNOSIS
M. F. Corcoran & K. Hamaguchi 29

MASSIVE BINARIES, WOLF-RAYET STARS AND SUPERNOVA PROGENITORS *J. J. Eldridge* 35

CIRCUMSTELLAR INTERACTION AROUND TYPE IB/C SUPERNOVAE AND THE GRB CONNECTION *R. A. Chevalier* 41

SUPERNOVA EXPLOSIONS IN WINDS AND BUBBLES, WITH APPLICATIONS TO SN 1987A *V. V. Dwarkadas* 49

POLARIZED LINE PROFILES AS DIAGNOSTICS OF CIRCUMSTELLAR GEOMETRY IN TYPE IIN SUPERNOVAE *J. L. Hoffman* 57

CONTENTS

WIND-BLOWN BUBBLES AND HII REGIONS AROUND MASSIVE STARS
S. J. Arthur 64

THE CASSIOPEIA A SUPERNOVA REMNANT IN X-RAYS
J. M. Laming & U. Hwang 72

THE EVOLUTION OF CIRCUMSTELLAR MEDIUM AROUND ROTATING MASSIVE STARS
S. M. Chiţă, A. J. van Marle, N. Langer, & G. García-Segura 80

CAS A: THE BRIGHT X-RAY KNOTS AND OXYGEN EMISSION
D. Dewey, T. DeLaney, & J. S. Lazendic 84

EVIDENCE FOR PRE-SN MASS LOSS IN THE GALACTIC SNR 3C 58
G. C. Rudie & R. A. Fesen 90

RELATIVISTIC OUTFLOWS IN GAMMA-RAY BURSTS
M. A. Aloy & M. Obergaulinger 96

SUPERNOVAE AND GAMMA RAY BURSTS *M. Della Valle* 104

AUTHOR INDEX 113