

Contents

Preface

v

SESSION A OBSERVATIONS RELATED TO REGIONS OF STAR FORMATION

- I. Infrared Observations of Possible Protostars
E. E. Becklin and G. Neugebauer 1
- II. Optical Observations of Very Young Stars
L. V. Kuhi 13
- III. A New Class of Compact, High-Density HII Regions
P. G. Mezger 33
- IV. Neutral Hydrogen in HII Regions and Regions of Star Formation
Kurt W. Riegel 61
- V. Young Stars, Circumstellar Clouds and Globules
V. C. Reddish 87

SESSION B EVOLUTION OF STARS AND HII REGIONS

- I. The Formation of Stars
Sebastian von Hoerner 101
- II. The Effects of Star Formation and Evolution on the
Evolution of HII Regions
Robert M. Hjellming 171
- III. Evolution of HII Regions: Early Stages
William G. Mathews 189
- IV. Expansion Stages in the Dynamics of HII Regions
Barry M. Lasker 227

SESSION C OPTICAL AND RADIO OBSERVATIONS OF HII REGIONS

- I. Space Distribution of HII Regions
Paul Murdin and Stewart Sharpless 249
- II. Optical Work on the Kinematics of Galactic HII Regions
Joseph S. Miller 269

III. Radio Continuum Observations of HII Regions <i>Yervant Terzian</i>	283
IV. Comparison of Optical and Radio Flux Measurements of HII Regions <i>William Gebel</i>	313

**SESSION D
RADIO RECOMBINATION LINES**

I. Observations of Radio Frequency Recombination Lines <i>Patrick Palmer</i>	335
II. Theoretical Intensities of Recombination Lines <i>Leo Goldberg</i>	373
III. Recent Calculations on the Interpretation of the Radio Frequency Recombination Line Spectrum of Hydrogen <i>J. E. Dyson</i>	413

**SESSION E
THE ELECTRON TEMPERATURE OF HII REGIONS**

I. The Electron Temperatures in HII Regions <i>Lawrence H. Aller</i>	423
II. Theoretical Determinations of Temperatures in HII Regions <i>Robert M. Hjellming</i>	435
III. Optical Measurements of Electron Temperatures in HII Regions <i>James B. Kaler</i>	459
IV. Radio Measurements of Electron Temperatures <i>P. G. Mezger</i>	477
V. Small-Scale Thermal Homogeneity of the Orion Nebula <i>Guido Münch</i>	507

**SESSION F
LARGE SCALE DISTRIBUTION OF HII REGIONS**

I. The NRAO 11 Centimeter Continuum Survey of the Northern Galactic Plane <i>Wilhelm Altenhoff</i>	519
II. Southern Galactic Continuum Surveys at High Frequencies <i>Frank J. Kerr</i>	535
III. HII Regions and Larger Scale Galactic Structure <i>B. F. Burke</i>	541
IV. Large Scale Distribution of HII Regions in Galaxies <i>W. W. Morgan</i>	565
V. Optical Study of Ionized Hydrogen <i>G. Courtés, Y. Georgelin, Y. Georgelin, G. Monnet and A. Pourcelot</i>	571

VI. Spiral Arm Features and the Large Scale Distribution of Neutral Hydrogen in Galaxies <i>Morton S. Roberts</i>	617
---	-----

**SESSION G
OH EMISSION**

I. OH in the Galaxy <i>Harold Weaver</i>	645
II. Interferometry of OH Sources <i>James M. Moran, Jr.</i>	681
III. Theory of Non-Thermal Emission from Interstellar OH <i>Alan E. E. Rogers</i>	695
IV. Ultraviolet and Infrared Pumping of OH Molecules <i>M. M. Litvak</i>	713
V. Maser Action in Space <i>T. Gold</i>	747
Concluding Remarks I, Optical Observations <i>Donald E. Osterbrock</i>	765
Concluding Remarks II, Radio Observations <i>Gart Westerhout</i>	771