

CONTENTS

LIST OF CONTRIBUTORS	v
FOREWORD	ix
PREFACE	xi
Quelques Réflexions sur la Caméra Électronique. By A. LALLEMAND	1
Propriétés des Photocathodes Libérées dans un Vide Elevé. By Mlle S. CHARRIER AND G. WLÉRIK	5
Sur une Nouvelle Technique d'Utilisation de la Caméra Électronique. By M. DUCHESNE	19
A Modified Lallemand Image Tube. By G. E. KRON	25
Sur la Réalisation d'une Caméra Électronique de Grandissement 1/7. By M. DUCHESNE	27
Advantages of a Bakeable Electronographic Plate. By G. E. KRON	35
A Low Background Image Tube for Electronography. By W. A. HILTNER AND W. F. NIKLAS	37
An Image Tube with Lenard Window. By J. D. MCGEE AND B. E. WHEELER	47
Thin-window Image Intensifier with Phosphor Output. By J. D. MCGEE, R. W. AIREY AND B. E. WHEELER	61
Image Resolution in Thin-window Intensifiers Using Homogeneous Fields. By B. ZACHAROV	67
An Image Intensifier System for Direct Observation at Very Low Light Levels. By P. SCHAGEN, D. G. TAYLOR AND A. W. WOODHEAD	75
Low Brightness Photography by Image Intensification. By A. BOUWERS	85
Derniers Développements sur les Intensificateurs d'Image Rayons X à Grand Gain et les Tubes Convertisseurs d'Image. By L. F. GUYOT	91
A Demagnifying Image Tube for Nuclear Physics Applications. By B. ZACHAROV	99
A Two-stage Electrostatic Image Intensifier with a Large Photocathode Area. By A. W. WOODHEAD, D. G. TAYLOR AND P. SCHAGEN	105
An Image Intensifier for Track Recording. By O. GILDEMEISTER AND R. GIESE	113
Experiences with Magnetically Focused Cascade Image Intensifiers. By G. P. DAVIS	119
Further Work on Image Intensifiers with Transmitted Secondary Electron Multiplication. By D. L. EMBERSON, A. TODKILL AND W. L. WILCOCK	127
A Transmission Secondary Emission Image Intensifier. By N. A. SLARK AND A. J. WOOLGAR	141
Transmission Secondary Emission from Low Density Deposits of Insulators. By G. W. GOETZE	145
Progress Report on a Channelled Image Intensifier. By E. A. FLINN	155
An Image Intensifier Tube using the Multipactor Principle. By P. H. FOREMAN AND R. F. THUMWOOD	163
Some Methods of Minimizing the Black-border Effect in the Image Orthicon Television Pick-up Tube. By S. MIYASHIRO AND Y. NAKAYAMA	171
Electronic Zooming with the Image Orthicon Television Pick-up Tube. By S. MIYASHIRO AND Y. NAKAYAMA	195
Image Orthicons with Magnesium Oxide Targets. By J. BLAKE AND R. B. BURTT	213
Development of an Infra-red Vidicon-type Pick-up Tube with a Lead Sulphide Target. By W. HEIMANN AND C. KUNZE	217

An Improved Ultra-violet Sensitive Vidicon. By J. WARDLEY	227
Electron Bombardment Induced Conductivity Including its Application to Ultra-violet Imaging in the Schuman Region. By R. J. SCHNEEBERGER, G. SKORINKO, D. D. DOUGHTY AND W. A. FEIBELMAN	235
Bombardment-induced Conductivity Targets for Image Orthicons. By J. W. F. ALEXANDER AND R. B. BURTT	247
Electron Tubes for High-speed Photography. By A. E. HUSTON AND F. W. WALTERS	249
Bright Displays for Radar Applications. By D. BYATT	265
The Tenicon; A High Resolution Information Storage Tube. By B. W. MANLEY AND P. SCHAGEN	287
Limitations to Resolving Power in Electronic Imaging. By A. E. ANDERSON AND R. J. SCHNEEBERGER	299
A Survey of Work at CBS Laboratories on Photoelectronic Image Devices. By B. R. LINDEN	311
Introduction of Pre-formed Photocathodes into Vacuum Systems. By J. R. FOLKES	325
The Study of Photocathode Composition by Microbalance Methods. By F. V. ALLAN AND B. R. C. GARFIELD	329
Aberration in Magnetic Focus Systems. By R. L. BEURLE AND W. M. WREATHALL	333
Recent Astronomical Observations obtained with the Lallemand Electronic Camera. By M. F. WALKER	341
Photographie des Étoiles Doubles au Moyen de la Caméra Électronique. By J. RÖSCH, G. WLÉRIK AND C. BOUSSUGE	357
La Photographie Électronique des Planètes et ses Applications Photométriques. By G. WLÉRIK, J. RÖSCH, Mlle M. DUPRÉ AND Mlle M. BELLIER	371
Astronomical Tests of an Imaging Photomultiplier. By W. L. WILCOCK AND W. A. BAUM	383
Laboratory Evaluation of Image Tubes for Astronomical Purposes. By W. A. BAUM	391
Some Astronomical Uses of Image Intensifying Tubes. By L. W. FREDERICK, J. S. HALL, W. A. BAUM AND W. K. FORD, JR.	403
Potentialities and Limitations of Image Scanning Techniques in Astronomy. By J. A. HYNEK, G. BARTON, R. AIKENS AND W. POWERS	409
A Report on the Image Orthicon using Slow Read-out. By JOHN H. DEWITT, JR.	419
Stellar Photometry with an Image Orthicon. By W. C. LIVINGSTON	431
The Image Orthicon Applied to Solar Photometry. By E. W. DENNISON	447
The Potentialities of Electronically Scanned Photoconductive Image Detectors for Astronomical Uses. By R. K. H. GEBEL	451
Scintillation Chamber Comparisons: Fibers <i>v.</i> NaI and Image Intensifiers <i>v.</i> Orthicons. By D. O. CALDWELL	469
Performance of an Image Intensifier System. By D. A. HILL, D. O. CALDWELL AND R. A. SCHLUTER	475
Filament Scintillation Chamber Experiments at Princeton University. By G. T. REYNOLDS, D. B. SCARL, R. A. SWANSON, J. R. WATERS AND R. A. ZDANIS	487
Work at Imperial College, London, on the Use of Image Intensifiers in Nuclear Physics. By D. M. BINNIE, M. R. JANE, J. A. NEWTH, D. C. POTTER AND J. WALTERS	501
Two High-energy Physics Experiments using the Luminescent Chamber. By L. W. JONES AND MARTIN L. PERL	513
Photography of Extensive Air Showers in the Atmosphere. By D. A. HILL AND N. A. PORTER	531
The Application of Scintillation Chambers to Space Research. By R. F. DOOLITTLE II AND C. D. GRAVES	535

CONTENTS

xv

Properties and Applications of Glass Scintillators. By T. P. FLANAGAN, D. G. ANDERSON, E. H. NOÉ AND J. DRACASS 547

Recent Applications of Transmission Secondary Emission Amplification. By G. W. GOETZE AND A. TAYLOR 557

X-Ray Image Intensification Using Multi-stage Image Intensifiers. By C. E. CATCHPOLE 567

The Image Orthicon in Diagnostic Radiology. By G. A. HAY 581

Image Storage Techniques Applied to Diagnostic Radiology. By C. A. GREATOREX 593

Some Experiences with X-Ray Image Intensifiers and Television Channels. By W. HERSTEL 601

Recent Developments in Solid State Image Amplifiers. By G. F. J. GARLICK 607

Some Applications of Solid State Image Converters (SSIC). By W. STÜRMER 613

Experiments on a Wire-electrode Type Image Intensifier Using Electroluminescence. By T. SASAKI, T. NAKAMURA AND S. GOTO 621

The Boundary Layer Image Converter. By H. NASSENSTEIN 633

AUTHOR INDEX 641

SUBJECT INDEX 647