

## CONTENTS

CONTRIBUTORS . . . . .	ix
PREFACE . . . . .	xv
PROFESSOR J. D. MCGEE . . . . .	xvi
LLL TV Sensors with 18 mm Useful Input Diagonal Using Demagnifying Image Intensifiers. L. K. VAN GEEST . . . . .	1
Low-light-level TV with Image Intensifier Tubes and CCDs. J. C. RICHARD, D. RIOU AND M. VITTO . . . . .	9
Low-light-level TV with II/CCD Coupled Devices: Relative Merits of Different Approaches. H. ROUGEOT AND P. GIRARD . . . . .	17
A fibre-optically Coupled Intensified CCD Camera System. P. R. TOMKINS . . . . .	27
A 3-stage 80:7 mm Image Intensifier Combination for the CERN UA2 Scintillating Fibre Detector. L. BOSKMA, A. BAKKER, J. A. C. COCHRANE AND K. W. J. STOOP . . . . .	35
A 40 mm MCP Intensifier for Photon Counting. T. J. NORTON, R. W. AIREY, B. L. MORGAN, P. D. READ AND J. R. POWELL . . . . .	41
Development of a CCD-Digicon Detector System. R. G. HIER, W. ZHENG, E. A. BEAVER, C. E. McILWAIN AND G. W. SCHMIDT . . . . .	55
Increased Gain of Channel Intensifier Tubes by Pulsed Biasing. B. W. NOEL, M. R. CATES AND L. A. FRANKS . . . . .	69
Influence of Output Electron Energy Distribution of Microchannel Plates on the Resolution of Image Intensifiers. N. KOSHIDA AND Y. KIUCHI . . . . .	79
MCP-PMTs as Ultra-fast Wide-band and Infrared-sensitive Detectors. K. OBA, H. KUME, K. WAKAMORI AND K. NAKATSUGAWA . . . . .	87
Performance of a Photon-counting Microchannel Plate Intensifier with Wedge and Strip Image Readout. O. H. W. SIEGMUND, C. J. HAILEY, R. E. STEWART AND J. H. LUPTON . . . . .	97
A Multichannel Detector for Photon Correlation. D. N. QU AND J. C. DAINTY . . . . .	107
Application of Image Intensifier-Vidicon Systems to Low-light-level Phenomena in Physics and Biology. G. T. REYNOLDS, A. EISEN, A. J. WALTON AND L. A. CRUM . . . . .	119
Cooled CCD Systems for Biomedical and Other Applications. C. D. MACKAY . . . . .	129
Utilisation Astronomique de la Caméra Electronique Grand Champ-II. G. WLERICK, G. LELIEVRE, L. RENARD, B. SERVAN D. HORVILLE, J. FROMAGE, J. M. LE FLOHIC ET D. BAUDUIN, A. BIJAQUI ET G. COURTES . . . . .	135
Image Recording in Electron Microscopy. D. McMULLAN . . . . .	147
A ½-inch (H) × 492 (V) Pixel Colour Synchro Vision CCD Image Sensor. N. HARADA, Y. ENDO, C. TANUMA, M. IESAKA, Y. EGAWA, H. NOZAKI, S. UYA, S. SANADA, A. FURUKAWA, S. MANABE AND O. YOSHIDA . . . . .	157
Thinned Rear-face Electron-bombarded FT CCDs for LLL TV Imaging. L. BERGONZI, M. LEMONIER AND M. PETIT . . . . .	165
A 2 × 2048 Pixel Bilinear CCD Array for Spectroscopy (TH 7832 CDZ). J. L. COUTURES AND G. BOUCHARLAT . . . . .	173
Development of EBCCD Cameras for the Far Ultraviolet. G. R. CARRUTHERS, H. M. HECKATHORN, C. B. OPAL, E. B. JENKINS AND J. L. LOWRANCE . . . . .	181
Recent Developments in Solid-state Arrays for Infrared Astronomy. I. S. McLEAN . . . . .	201

Multiple-frame UV/X-Ray Picosecond Framing Camera. R. T. EAGLES, W. SIBBETT, W. E. SLEAT, D. R. WALKER, J. M. ALLISON AND N. J. FREEMAN	209
Evaluation of PV001 and P-100 Tubes for Multiple-channel Streak Cameras. S. MAJUMDAR, P. Y. KEY, M. YA SCHELEV, Y. SURDYUCHENKO, W. SEKA, M. C. RICHARDSON, P. YAANIMAGI AND R. KECK	219
Evaluation of a Photon-counting Streak Camera with CCD Recording. S. MAJUMDAR, P. Y. KEY, V. PLATONOV AND A. RIDGLEY	221
A New Method for Observing High-speed Luminous Phenomena. Y. KIUCHI, N. KOSHIDA AND T. SAKUSABE	223
An X-Ray Streak Tube with Demountable Photocathodes. B. E. DASHEVSKY, V. A. PODVYAZNIKOV, A. M. PROKHOROV, A. V. PROKHINDEEV AND V. K. CHEVOKIN	233
A Subnanosecond Multi-framing Camera. V. V. LUDIKOV, A. M. PROKHOROV AND V. K. CHEVOKIN	239
A CsI(Na) Scintillation Plate with High Spatial Resolution. K. OBA, M. ITO, M. YAMAGUCHI AND M. TANAKA	247
X-Ray Imaging Sensor Using a CdTe/a-Si:H Heterojunction. Y. HATANAKA, S. G. MEIKLE, Y. TOMITA AND T. TAKABAYASHI	257
Low-noise Solid-state Linear Detectors for Large-field-of-view X-Ray Radiology. H. ROUGEOT, B. MUNIER, G. ROZIERE AND P. PRIEUR-DREVON	269
An Image-intensified CCD Area X-Ray Detector for Use with Synchrotron Radiation. R. H. TEMPLER, S. M. GRUNER AND E. F. EIKENBERRY	275
Further Developments of an X-Ray Television Detector. U. W. ARNDT AND G. A. IN'T VELD	285
Development of Large-format Photon-counting Array Detectors for the Lyman Ultraviolet Space Telescope. E. H. ROBERTS, I. R. TUOHY AND M. A. DOPITA	297
Image Intensifier Tubes with Intagliated Screens. M. FOUASSIER, V. DUCHENOIS, J. DIETZ, E. GUILLEMET AND M. LEMONIER	315
Photocathodes on Polycrystalline CsI/Na. Y. ARAMAKI	323
High Performance with Trialkaline Antimonide Photocathodes. P. DOLIZY, F. GROLIÈRE AND M. LEMONIER	331
Relationship Between Microstructure and Photoelectric Quantum Yield (PQY) of S-1 Photoemitting Surfaces. C. W. BATES JR, Q. Y. CHEN AND N. V. ALEXANDER	339
S-20 Photocathode Stability Considerations. E. A. BEAVER, L. ACTON, D. DOLIBER, E. DOZIER AND H. WENZEL	347
Physical Model and Optimization of a Heterostructure Vidicon Target Based on Amorphous Hydrogenated Silicon. F. SCHAUER, M. JEDLIČKA AND J. KOČKA	359
A New Extended Infrared Vidicon. T. KAWAI, K. SUGA, K. MURAMATSU, T. OTAKA, K. ATSUMI AND R. NISHIDA	369
Avalanche-mode Amorphous Selenium Photoconductive Target for Camera Tube. K. TANIOKA, J. YAMAZAKI, K. SHIDARA, K. TAKETOSHI, T. KAWAMURA, T. HIRAI AND Y. TAKASAKI	379
An Electrostatic Deflection, Electromagnetic Focusing Pick-up Tube for High-definition Television. H. ROUGEOT AND J.-L. RICAUD	389
Surface Temperature Measurement of Small Objects by the Microthermovision Technique. V. RYŠÁNEK	397
Anti-veiling Glare Windows for Third-generation Image Intensifiers. J. R. HOWORTH	405
The Design of the Image Intensifier for the Faint Object Camera of NASA's Space Telescope. R. P. RANDALL AND B. WILD	413
Evaluation of Photon-event-counting Intensifiers. R. W. AIREY, T. J. NORTON, B. L. MORGAN, P. D. READ AND J. L. A. FORDHAM	425

Calculations of the Electron Optics of Image Intensifiers Taking Account of Deviations from Rotational Symmetry. W. MÜLLER . . . . .	435
Optimization of the Imaging Properties of an Image Inverter Tube. M. F. CALITZ, A. G. DU TOIT AND C. F. VAN HUYSSTEEN . . . . .	457
An XUV Image Sensor for Rowland-circle Spectrographs. J. L. LOWRANCE AND C. L. JOSEPH . . . . .	465
Properties of Imaging Electron-optical Systems for Image Tubes. V. JAREŠ . . . . .	475
Numerical Evaluation of Spread and Transfer Functions for Image Intensifiers with Polychromatic Illumination. J. M. WOŹNICKI . . . . .	483
INDEX . . . . .	497