

SPACE RESEARCH IN THE UNITED KINGDOM

(in continuation of Space Research in United Kingdom Universities)

Published each January. Price 13s. 6d. (U.S. \$2.00) including postage
(1963-64. 80 pp. 6 line drawings)

REPORTS FOR 1963-64

The reports cover in general the period July 1963 to August 1964 although, where available at the time of preparation for press, information later than this has been included. The publication has been divided into two parts. The first part comprises the reports of investigators in University Departments who are in receipt of space research grants. The British Astronomical Association also receives a grant and its report is included. The second part consists of reports by Government establishments carrying out space research programmes.

PART I

Bates, D. R.	Upper atmosphere studies
Beynon, W. J. G.	Ionospheric studies and satellite tracking
Boyd, R. L. F.	Geophysical and astronomical investigations
Bradley, D. J.	Ultra-violet interference spectroscopy with image intensifier detection
Elliot, H.	Energetic particle studies
Groves, G. V.	Neutral atmosphere studies
Hall, S. H.	Geomagnetic studies
Houghton, J. T. and Smith, S. D.	Meteorological investigations from a satellite
Hutchinson, G. W.	Study of extra-terrestrial γ -rays
Ingham, M. F.	Studies of Lyman α and H α radiation from the night sky
Kaiser, T. R.	Ionospheric studies using radio waves
Kopal, Z.	Michelson spectrometry for space astronomy
Lovell, Sir Bernard	Micrometeorite studies and tracking of space vehicles
Marsden, P. L.	Cosmic ray studies
McGee, J. D.	Image transducer research
Ring, J.	Studies of ultra-violet and infra-red techniques for space astronomy
Roy, A. E.	Investigation of the Moon's gravitational field and close lunar satellites
Sayers, J.	Studies of ionization in the upper atmosphere
Sheppard, P. A.	Meteorological investigations
Stewardson, E. A.	X-ray astronomy
Smith, F. G.	Studies of galactic and extra-galactic radiation
Weekes, K.	Investigations on radio waves from satellites
British Astronomical Association	Optical observations on artificial satellites

PART II

The Culham Laboratory (UKAEA)	Spectroscopic studies
Meteorological Office	Studies of the high atmosphere
National Physical Laboratory	Theoretical gravitational studies and ultra-violet spectroscopy
Radio Research Station	Geophysical investigations
Royal Aircraft Establishment	Orbital analysis and geophysical studies
Royal Greenwich Observatory	Satellite tracking by kinetheodolite
Royal Observatory, Edinburgh	Astronomical studies and satellite tracking
Royal Radar Establishment	Satellite tracking

Published by the Royal Society, Burlington House, London, W. 1

CONTENTS

A DISCUSSION ON RECENT EXPERIMENTS ON THE
CHEMISTRY OF CORRIN

ORGANIZED BY DOROTHY CROWFOOT HODGKIN, F.R.S.

	PAGE
DOROTHY CROWFOOT HODGKIN, F.R.S. The structure of the corrin nucleus from X-ray analysis	294
A. ESCHENMOSER, R. SCHEFFOLD, E. BERTELE, M. PESARO AND H. GSCHWEND. Synthetic corrin complexes	306
J. D. DUNITZ AND E. F. MEYER, JR. Structure analysis of nickel(II)-1,8,8,13,13-pentamethyl-5-cyano- <i>trans</i> -corrin chloride	324
B. KAMENAR, B. F. HOSKINS AND C. K. PROUT. The molecular structure of Eschenmoser's 'pseudo-corrin'	331
A. W. JOHNSON AND I. T. KAY. Synthesis of corroles and related ring systems	334
R. BONNETT AND D. G. REDMAN. The nuclear magnetic resonance spectrum of a cobyric acid derivative	342
F. WAGNER. Reactions of the cyano and alkyl cobalamins	344
H. KUHN, K. H. DREXHAGE AND H. MARTIN. The light absorption of vitamin B ₁₂	348
<i>Discussion.</i> Barbara Hopf Offenhartz	350
H. A. O. HILL, J. M. PRATT AND R. J. P. WILLIAMS. Some physical and chemical properties of the corphyrins	352
DOROTHY CROWFOOT HODGKIN. Postscript	359

The photolysis of ozone by ultraviolet radiation. II. The photolysis of ozone mixed with certain hydrogen-containing substances. By R. G. W. NORRISH, F.R.S. and R. P. WAYNE	361
The λ -method for rectangular plates. By P. M. QUINLAN	371
Bending, buckling and curling of a heated elliptical plate. By E. H. MANSFIELD. (Plate 4)	396
The crystal and molecular structure of guanine hydrochloride dihydrate. By J. IBALL and H. R. WILSON	418