

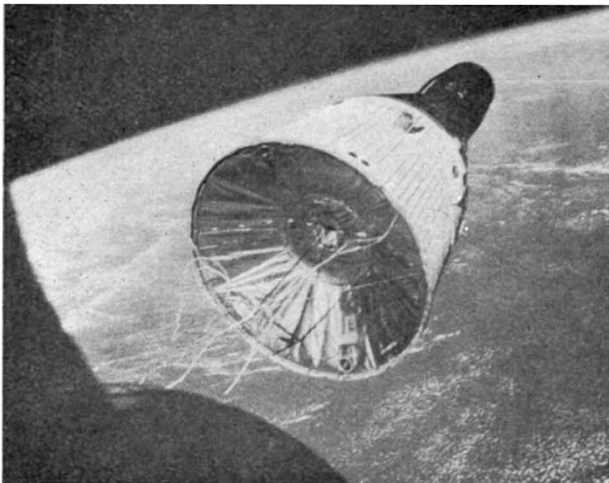
largely retained, and the eight articles making up the bulk of the book are clarified with the diagrams which originally accompanied them. One quibble—one or two illustrations retain what are, to me, rather dull colours, carried over presumably from the original articles. In the article by Dr R. D. Davies on magnetic fields in galaxies, for example, an otherwise splendid photograph of the Crab Nebula is printed in a particularly drab shade of pea-soup green. Otherwise, the illustrations are successful in clarifying points made in the text, and there are several colour photographs.

*The New Universe* stands out from the current flood of astronomy books. Written by the scientists responsible for many of the important developments described, it takes the reader rapidly to the new discoveries and their importance. It is therefore chiefly for the reader who wants to know what astronomers are doing today, and who is willing to forgo an extensive history of the subject, already covered very well in any number of books.

It is worth listing the contributors and the articles they have written. Sir Bernard Lovell sets the scene for the progress of the 1960s with an article which gives the book its title, and Sir Richard Woolley describes the galaxy and how it was mapped out. Sir Martin Ryle and Dr John Shakeshaft write on radio galaxies, Dr R. D. Davies on magnetic fields in galaxies, Dr Jesse L. Greenstein on observing the universe (an article discussing what sort of telescopes are needed), Dr Maarten Schmidt on quasi-stellar objects, Frederick Reines on neutrino astronomy, and R. H. Dicke on gravitation and the universe. The introduction by Professor Brück serves to tie the whole together.

EDWARD PHILLIPS

## SPACE ODYSSEY



Gemini 7 taken through the hatch window of Gemini 6 at an altitude of 160 miles—one of the illustrations from *The Promise of Space*, by Arthur C. Clarke (Hodder and Stoughton: London, 70s). This well-illustrated book by the author of some twenty works of science fiction and several popular books on astronautics is a review of what has been done so far in the exploration of space and what may happen in the future. In the introduction to his book Clarke writes that after a “prolonged and near-fatal flirtation with the Indian Ocean” described in an earlier book, his interest in space travel was reawakened by “three years’ hard labour” working on the film *2001: A Space Odyssey* with Stanley Kubrick. The result was this entirely new work, replacing his earlier books on space travel now made very much out of date. Clarke optimistically hopes *The Promise of Space* will not depreciate technologically by more than a few per cent per annum.

## LOOKING AT STARS

### Observation in Modern Astronomy

By David S. Evans. Pp. xiv + 273 + 48 plates. (English Universities Press: London, August 1968.) 84s.

This book deals with the uses of ground based optical telescopes; it gives a general review of modern observational techniques and the results which have been obtained. Written for the general reader, with a descriptive and non-mathematical exposition, it achieves a good balance between the seven areas covered. These are: positional astronomy (the accurate measurement of the positions of stars and how these change with time); the measurement and analysis of stellar radiation and the classification of stars as to spectral type; the relations between stellar magnitudes, temperatures, masses, spectral types, etc., and their bearing on the problems of stellar evolution; the motions of stars in the galaxy; variable stars, novae and supernovae; binary stars and stellar associations; and, finally, galaxies with particular reference to the Milky Way system. Each section contains a list of references which will lead the reader on to more detailed reading matter. It is a pity, however, that no references later than 1965 are made, because this leaves certain paragraphs, such as those dealing with quasars and cosmology, sadly out of date. The production of the book is good, although I would have liked to see more figures in the text as this would definitely assist some of the descriptive passages. The 48 plates are exceptionally fine, although it is odd that they do not seem to be referred to in the text.

While the book emphasizes the older and well proven observational techniques, it is disappointing that many newer techniques are omitted or at best just mentioned. The author quotes as his cardinal rule “Write about what you know, and not what you think you ought to know”. It seems unfortunate to me that this has led him to omit any mention of our nearest astronomical neighbours, the Sun, the Moon and the planets.

In the preface the author states that he has tried to produce “a manual for the student who aspires to be a working astronomer, or the physicist who wants to know what goes on in observatories, which will give indications of standard methods and standard topics of discussion”. He describes astronomical research as the painstaking recording of telescopic observations, their complex reduction and the slow but sure revelation of the structure of the stars and the galaxies. These are truly important aspects of astronomical work, but, for me, the author fails to engender enthusiasm and much of the excitement of present day astronomy is lost. Astronomy is not as dull as it is here made out to be. We are living in great times and soon man will set foot on the Moon and look up at the stars without being fettered by the earthly blanketing atmosphere. In the next decade we can truly say the sky is the limit. Never before have astronomers lived at such an exciting time. DAVID W. HUGHES

## TRIBUTES TO AN ASTRONOMER

### Modern Astrophysics

A Memorial to Otto Struve. Edited by M. Hack. Pp. 360. (Gauthier-Villars: Paris; Gordon and Breach: New York, 1967.) 78 francs.

OTTO STRUVE was a great man, one of the leading astronomers in the present century. At various times he held some of the most eminent positions in astronomy: he directed Yerkes Observatory for eighteen years during the period of its greatest activity and distinction; from there he moved to Berkeley and, towards the end of his life, he was the first director of the National Radio Astronomy