

Editor:

S P A C E R E V I E W

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8. R. Stebbing, F.I.L.S.

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1962, April.

a d i t o r i a l

I think at last we have something in the way of a newsletter. It is a little larger than the first issue, but owing to duplicating costs, it has become impossible to expand too rapidly.

Time is needed to gather material and to set it out in a suitably edited form - but I definitely enjoy doing it, and hope also that you will enjoy reading it. Please feel free to express any criticisms, either to set-up, or the material contained in this issue. With the help of constructive criticisms, an endeavour will be made to present a better issue for further printings. Letters, news items, and articles are continuously requested, but I'm happy to say that my earlier appeal for articles has filled the need for the next two issues.

The announcement regarding my dissociation with LUBOR has brought in a large number of enquiries as to the reason behind the break-away. The less said about this, the better, but people who wish to guarantee a reply to general enquiries should enclose a stamped addressed envelope. Unfortunately or otherwise, the editor has a lot of business letters to deal with and cannot undertake regular correspondents except under circumstances when special research of a scientific nature is being carried out.

Col. John Glenn has returned safely from his three orbital flight round the Earth. I was lucky enough to be at home to hear the programme from start to finish as it was relayed from the NBC Network and the Mercury Control Centre at Cape Canaveral in sunny Florida. One could not help feeling tense at the time of the rocket ignition and the re-entry of the capsule into the Earth's atmosphere which are the most trickiest parts of the whole programme as far as the safety of the astronaut is concerned. Belated congratulations are extended sincerely to the U.S. scientists for the outstanding success of the project. Incidentally, the small objects, reported by Col. John Glenn to be following his spacecraft Friendship 7, are said to be parts of the clamping system holding the capsule to the Atlas D. Booster. These objects were reported as unidentified during the flight. BUT!.... What about the luminous particles observed by Col. Glenn during sunrise from his point in orbit? These tiny luminous objects still remain unidentified.

In this issue, we are lucky to have an article written by Dr. Imre Fidler on the subject of "Extra-Terrestrial Life." Dr. Fidler is very busy carrying out special research on various scientific subjects, and has presented the article to "Space Review" while the information would be considered as up to date. The other article is by J. G. Roberts of the Preston & District Astronomical Society, who is also a practical lunar astronomer. The note on the Aphonsus region eruption is presented by Dr. Peter Hédervári of Budapest - a specialist on lunar vulcanism. Another article by the same authority will be included in the next issue of SPACE REVIEW, together with other articles, news items etc.

You must have friends who'd be interested in the review. Tell them to subscribe.

LUNAR DISTRICT BEHOLD US  
TO SPACELAND  
by J. G. Roberts

In preparation for the day when man will set foot on the Moon, the Armour Research Institute in the United States has made an intense study of the constitution of the lunar surface in an attempt to decide what part would be most suitable for a manned landing. The loose dust present on the crater floors would be too great a hazard to the landing spacecraft; its rockets, used to slow down the vehicle on approach to the Moon's surface, would only blast a deep hole in the loose grit.

N. D. Weil, director of mechanics research at the institute, points out that landing on volcano slopes or mountain-ringed plains, too, would be disastrous for the spacecraft. However, the maria are believed to be reasonably rigid, fairly smooth and would present a fairly easy target for the guidance system.

Studies at Armour Research Institute have indicated that the lunar highlands and crater rims only are free from dust. Covering much of the lunar surface, it is said to be relatively free-flowing, loose and somewhat similar to "silver sand", mainly due to the electrostatic forces within the dust particles themselves and the relatively small gravitational field of the Moon.

The slopes of lunar craters are covered by a layer of dust several hundred feet thick at the base. Slowly, under the pressure of sunlight, solar proton bombardment and lunar gravity, the mass of dust is being pushed down onto the crater floors. This mass of dust has been likened to an ice glacier--in a state of equilibrium, which could be upset by any seismic activity in the region, for example, the impact of any large meteor - or the landing of a space vehicle. The floors of the craters are supposed to be filled to the depth of as much as several miles, so that any unwary spaceman may find himself trapped in a lunar "quicksand."

Professor Zdenek Kopal of the University of Manchester, and other selenologists, have suggested recently that there may be water on the Moon. Weil says that this moisture may have originated from impacted meteoroids so that some kind of "cement" may have formed within the deep layers of lunar dust. Proposals have been put forward to use this lunar "cement" as a building material on the Moon, thus saving valuable payload weight in the spacecraft.

Armour's studies also indicate that the layer of dust on the maria is far thinner than that in the craters. Maria having a convex surface are believed to have a thinner layer of dust - in the region of centimetres in thickness--than a concave maria, which may have an appreciable thickness of dust in its bowl-shaped surface.

The findings of the Armour Research Institute are in line with visual and radio observations of the lunar surface. Research scientists at Armour are confirming their findings by studying the behaviour of dust under hard vacuum conditions in the laboratory.

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The problem of the red spot observed in the central region of the Alphonsus r.n.f.d. crater has been a source of controversy among selenologists. Not all observers accept Kozyrev's view pertaining to a volcanic origin.

Recently I wrote to P. Hédervári, a well-known lunar observer in

Budapest, Hungary, who presented an English translation on the problem of lunar volcanism which appeared originally in the Földtani Köz-  
löny/Geological Bulletin of the Hungarian Geological Society, Vol. 3,  
dated July/September, 1959, Budapest.... The subject is given below:-

On the Problem of Presence of Lunar Volcanism

by Dr. Peter Hédervári

On the night of November 3rd, 1958, Kozyrev observed a volcanic gas eruption in the ring-mountain Alphonsus of the Moon. Sixteen days later, Dr. H. P. Wilkins found in the proximity of the Alphonsus' central peak, a new red spot which was probably due to the mentioned volcanic phenomena. According to Kozyrev's observation, the central peak was at first dark, but later became suddenly very bright. He supposed the cause of the first phenomenon to be the dark volcanic dust and fine scoria, while he ascribed the brightening to a gas explosion.

One may suppose that the new spot of the ring-mountain consists of lava, the quantity of which is not too much in comparison with the dimensions of Alphonsus. According to Kozyrev's opinion, the volume of the gas was only about 10<sup>3</sup> cubic meters, which is also small. These phenomena are characteristic of the so-called Volcano-Etna type volcanic eruptions, therefore, the author's present paper supposes that the volcanic eruptions of the ring-mountain Alphonsus is resembling that of the Volcano-Etna type of the Earth.

According to the author's hypothesis, the Alphonsus had probably two volcanic pipes, a thinner and a thicker one. In the thicker pipe, there is a large belonite; the upper part of this forms the central peak, which is probably the real volcano. This belonite was probably built up by consolidated lava. But, in the thinner volcanic pipe, there is no belonite; the gas, and later the lava, may have exploded through this pipe. The conclusion may be drawn that the new spot was not symmetrical with respect to the central peak, but is on the side of the latter. We may suppose that the gases have had insufficient power to raise the comparatively large belonite out of the thicker volcanic pipe. Therefore, the gas, and later the lava, exploded through the thinner pipe. So this is a parasite crater of Alphonsus. We find some parasite craters on Etna, too.

N. B. The author of the above paper did not observe personally, either the Alphonsus eruption or the Soviet Moon rocket on the lunar surface. A telescopic observation was later made in order to detect the red spot near the central peak, but the result was unfortunately negative.

It is also of interest to note that an explanation for the red spot phenomena was given by a group of scientific linguists whose headquarters were in Birmingham, England. The red spot was referred to as a large spaceship which had come to us by way of the Moon and had crashed on the lunar surface releasing red fuel. The occupants were fortunately unhurt and later picked up by a relief craft. This information, contained in a private letter, was presented in a very definite manner, although the authenticity of which is somewhat doubtful.

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## EXTR - TERRESTRIAL LIFE?

by Dr. Dominic Fidler

Since 1957, the age of space travel has opened up every possibility of reaching the planets. As I write this we are waiting for the developments of the January attempts from Cape Canaveral. Recent years have also seen developments in, for example, upper atmospheric research and mass spectrometry, but they have also led to a revolution in ideas bearing upon possible life-forms elsewhere.

Until 1957, the subject of UFOs was generally dismissed by scientific bodies despite contrary evidence offered by such men as S.J. Skjulse (Copenhagen) who recorded his belief that at least some of the reports were objective and factual. He also pointed out the correlation of his reports with the close approach of Mars and Venus. At that time, his theories met with no general acceptance; rather the opposite, and he himself was in danger of losing some of his conventional academic credit.

The Moon's conditions remain hostile to any known form of life and it is eminently reasonable to assume that no advanced life can survive there. W.F. Pickering believed in the existence of insects in some of the major craters, notably Eratosthenes, but few modern astronomers support his views. However, a definite doubt remains, and the moving patches inside the crater Aristillus are highly significant. The Japanese observer Motomoa has recently confirmed their motion and has even gone so far as to state that the patches wander beyond the glaciers of the crater. If this view is confirmed, the existence of organic matter is probable. The same authority has employed spectroscopic and polarimetric techniques to show that the localized region outside the eastern wall of Aristillus contains traces of magnesium chloride from which he infers the existence of former seas. This view was independently advanced by J.J. Gilvarry in "Nature" (168.886, Dec. 1960). The ichthyosaurus, the brontosaurus, the diplodocus and the gosootherium, though possibly not the pterodactyl, may all be buried beneath the lunar ash.

This has little bearing upon the UFO problem. Even if life existed once on the Moon it remains, if at all, in the lowliest forms today. Mars and Venus are indeed more promising, and of these, Venus holds out the better prospects. Recent researches by V.H. Moore and C.B. Ross in America have revealed abundant water-vapour there, and in such a case, the existence of marine life is highly probable. It has been suggested by the Russian biologist, K.V. Pulinov (1) that life on Venus may have developed along different lines from that of the Earth. Aquatic forms are capable of high development though this has not yet occurred in our own world. The first travellers to Venus may be confronted with a highly organised marine civilization. On this theory, however, Venus is unlikely to be the source of any UFO vehicles <sup>unless</sup> since the marine life-forms postulated by Pulinov could be incorporated into the design of these spacecraft then the case would be altered. Along these lines, we are now considering future developments. The case of the American Whittaker negroes, dependent upon regular immersion in water, fascinatingly related by Professor Robert Graves may be recalled as a parallel.

Spencer-Jones has termed Mars the "planet of ebbing life" though the description may not be entirely apt. H. Strughold, in The Green and

Red Planet, believes that the evolution there is in an early stage and may be developing. The spectroscopic investigations carried out by W. Sinton, and widely published, have demonstrated the accuracy of the plant hypothesis for the Martian dark areas. At the same time, W. Davidov, in the U.S.S.R., has advanced the highly plausible theory that the planet has an underground hydrosphere. This would supply the water and render the theory of a habitable Mars most convincing. Spectroscopic work carried out in Sweden by P. Katspa (2) demonstrates that the oxygen (O<sub>2</sub>) content of the atmosphere of Mars exceeds 10% and that there are traces of xenon as well as a definite amount of CO<sub>2</sub>.

Therefore, UFOs might come from Mars or from one of the satellites of the outer planets. The satellites of Mars, have, it is suggested by the eminent Russian Shklovsky, been artificially produced. By normal astrodynamics, assuming terrestrial densities, these movements are not easy to explain. What, it might be asked, has happened to the third Martian satellite discovered in 1879 by Wladyclav Przymliwicz? It has vanished. It may have been dismantled. Yet the satellites of Jupiter and Saturn are plainly natural. Titan, the largest of the latter, has an atmosphere and there is no theoretical objection to assuming the life-base to be thus supplied.

It is, in fact, demonstrably unsound to suppose that life must resemble that on Earth. Organic matter has also been detected in meteorites and since these bodies arose from some former and now disrupted planet, the existence of life there must be regarded as fairly definite. Cosmical disasters being rare, it may be that this former planet, known in ancient writings as Ke was destroyed albeit unwittingly by the Ke's themselves.

So many of these hypothesis would not be worthy of discussion were not some of the "objective saucer sightings" quite conclusive as to their true existence. Ether-drives or magnetic forces are not more, in the present state of our knowledge, than guesses. The distances from other planetary systems are too great for these to be the sources and we can only put the best interpretation upon what evidence we have.

In short, it appears that if the UFOs are interplanetary craft, and this still has to be proven, they are certainly extra-terrestrial, but could be entirely natural. They could probably come from Mars, where there are no insuperable objections to the existence of an intelligent, though probably underground race. We do not rule out Venus or Titan. A completely open mind must be preserved on this subject and to await the results of further research is what all of us, however impatiently, must do.

#### ACKNOWLEDGEMENTS

I am most highly indebted to discussions on this subject with Dr. Quentin Comber and for revealing correspondence with N. V. Kulinov (1) and P. Katspa (2). I should like to thank these three gentlemen most warmly for their assistance.

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## NEW BOOKS

Springtime of the Stars, by Georges Beau - translated by Dr. Hector J. Chiselsharpe, London, 1961. Jbelard-Schuman Ltd. Price 12/6d net.

I first came across this book in the B. . . . library at Burlington House. It was only just published, and my first impression was the attractive cover. Later I procured a review copy and delved deep into the contents. The author propounds a startling new theory on universal evolution based on cosmic cycles. The subject is wide in its approach. Chapters include, insecurity of the universe, the end of the world, the galactic seasons, exodus, help from outer space (UFOs), the end of solar system, the new galactic year, etc.

There is much to interest everybody who has read or carried out research in astronomy, geology and other sciences.

The French author, Georges Beau is a well-known scientific journalist who specializes in articles on science written specially for the layman. The translator, Dr. Hector Chiselsharpe, is also known to the Editor for his excellent research into astro-philology. He is the Director of the Interplanetary Philological Institute and has travelled abroad on many occasions in order to give lectures.

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T.P. Challenge of Unidentified Flying Objects, by Prof. Charles A. Maney and Richard Hall, Washington D.C., 1961. Distributors in England, S. R. Stebbing, 2 Station Road, Frimley, Nr. Aldershot, Hants. Price 26/- net.

This book is written in an attempt to apply a scientific method to the very perplexing problem of UFOs.

The secrecy behind the non-release of UFO information is effectively exposed by these two top authorities on the subject. There are sections devoted to electro-magnetic interference, radiation, and its effects on car ignitions, orthotony as propounded by Pierre Michel, angel's hair phenomena, etc. "The UFO reports from reputable witnesses, who are scientifically minded, deserve serious attention and investigation", so say the authors. But, scientists are really the only people equipped to study the pertinent available data. This, of course, should be carried out in a fair objective manner.

The Foreword is written by Dr. Charles P. Olivier, Emeritus Professor of Astronomy at the University of Pennsylvania who is also President of the American Meteor Society. He states, "The subject of UFOs is one which should be studied scientifically, which it has not been due to suppression of pertinent data... We do not know what some of these phenomena are and what causes them."

The P author is Professor Charles Maney, an astrophysicist who is head of the Physics Dept., at Defiance College, Ohio. His astronomical knowledge is credited with the measurements of the internal motions of the Orion Nebula, together with the late Prof. Edwin B. Frost, Director of Yerkes Observatory.

The co-author, Richard Hall is a graduate from Tulane University where he has received a B. A. in Philosophy. He has completed 36 semester hours in scientific philosophy, mathematics and logic.

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11.B. Books reviewed in this bulletin are usually obtainable by writing to the editorial address.

## DO SUPER-DENSE STARS HAVE A CRYSTALLINE CENTRE?

David Kirzhnits, a Soviet physicist of the Academy of Sciences, recently put forward the hypothesis that at stellar temperatures of millions of degrees centigrade, the strongly compressed substance of which stars are composed is crystalline instead of gas as was generally believed. Hitherto, physicists have taught that atoms, moving at stellar temperatures and speeds of about 100 kilometres (60 miles) a second, cannot be retained in one spot by any forces. Physicists have asserted that atoms move at fantastic speeds, forming an incandescent gas. It has been estimated that a star body consists of such gas and the assertion has been extended to stars known as the white dwarfs whose mass is of great density.

Kirzhnits claims to have proved that at super-high densities forces emerge which can stop the atoms, notwithstanding the colossal speeds. These forces, proved by mathematical calculations, align the formation of atoms typical of crystalline solid bodies.

Compression of which density of the substance reaches 1,000 tons per cubic centimetre is indicated in the centre of "white dwarfs". Kirzhnits believes the centres of such stars are composed of crystalline.

### MORE METEORS

Research carried out in the past year by Soviet scientists has given a clear picture on the distribution of meteoric matter in the solar system. It has now been established that there are a greater number of meteoric particles than was formally believed.

This announcement was made at the astronomical council of the Academy of Sciences of the U.S.S.R. held at Pulkovo Observatory near Leningrad.

Astronomers working at Ashkhabad and the Kharkov Polytechnical Institute with the use of radar techniques had determined the orbital paths of thousands of meteors and had prepared the first part of a catalogue of meteoric orbits.

At Kiev University, astronomers have made photographic observations of meteors for the determination of problems connected with astronomical and geophysical studies.

The study of meteors by direct methods have been carried out by means of sputniks and rockets; but observations from ground level have been conducted by complex radar system, photographic and visual

- methods.
- The first successful experiments by the means of electronic-optical devices have also been carried out on registering meteoric phenomena.

### SCIENTIST: PR BE ONCH 1 U. SPACE

- A four-man team at Manchester University is making plans for a three-year project to reveal secrets of Mars, Venus and space.
- The treasury has been asked by the British National Space Committee to make money available for the experiments.

- The project includes sending giant balloons to a height of 10,000 ft., and making infra-red studies of planets from observatories in Italy and the South of France.

- "We hope to start immediately," said Dr. R. Beer, who will lead the team under the direction of Dr. J. King in Prof. Z. Kopal's Department of Astronomy. With him will be Mr. R. Sternberg, Mr. T. Bull and a fourth scientist yet to be appointed.

### Dense Clouds

- They hope the infra-red techniques will enable them to penetrate for the first time in history, the

dense clouds which hide the surface of Venus.

They seek new discoveries about the "atmospheres" of the planets.

The balloons are likely to be used late in the project to lift instruments clear of the bulk of the Earth's atmosphere.

There they will make records which the scientists hope will lead to the discovery of the "missing link" in interstellar space --- molecular hydrogen.

urr it is there, it would mean that at last we could make a reasonable estimate of the mass of the galaxy," Dr. Beer explained. (Ref: Manchester Evening Chronicle, Feb. 2nd, 1962 & Mr. H. Bunting, President, D.I.G.P.)

P A N O R A M A F I A T U R E

V E N U S S E C T I O N M E E T I N G

On February 21st at 12 hours, the Venus Section of the British Astronomical Association held its first private sectional meeting at the association's London headquarters at Burlington House, under the guidance of the section's Director, Patrick Moore.

Tea, sandwiches and biscuits were provided and a discussion on the future programme and observations of the section were held in an informal atmosphere.

Meetings of this kind are to be highly commended as they promote interest in practical astronomical observations and allow sectional members to ask questions and approve or reject the future programme.

As a Director, Mr. Moore is highly enthusiastic about the work. Last year, a private meeting of the Lunar Section was held of which Mr. Moore is also a member.

D. I. G. P.

The Direct Investigation Group on Aerial Phenomena is seeking to widen its membership, both at home and abroad. Scientifically minded people who wish to carry out research into many varied aspects of interplanetary enigma's are welcome.

Also, local and overseas representatives are required. The group is willing to exchange newspaper cuttings, photographs of sighting incidents, U.O etc., with other groups.

Send stamped addressed envelope for details.

Membership 10/- Home (\$1.50) U.S.A., etc., includes 6 bi-monthly issues of "Space Bulletin", the group's official journal.

Write to the President, D.I.G.P., 34, Bowerfield Avenue, Hazel Grove, Stockport, Cheshire, England., he will be pleased to hear from you and will enclose a membership form for completion, if requested.

Your note in "PACA Review" leads me to suppose your resignation from Lufore is due to some internal dispute. I agree that any attempt to get support of UNESCO is quite useless, especially at a time when the subject is completely out of the news....

Signed... c. D. Allan, Coventry. Your new new 'bulletin' seems promising, I hope you do well with it - it may well help to broaden the views of a number of specialist astronomers.

Signed... R. Smith, B.Sc., F.B.I.O. Bracknell, Berks.

LETTERS

Thank you for your initial copy of "Space Review"--congratulations on starting it; might lead somewhere. Signed: Geoff Cooper,

Little Eaton, Derby. Since the report of the Van Allen Belt given by the Explorer II, I've wondered if it is possible for man to get off the earth except at the poles. I have wondered at the type of being that could enter this high type of energy protons and I have without harm...

Signed: J.J. Hvinson, Jersey City, N.J. U.S.A.

Note: How about Gagarin, Titov and Glenn?

Ice on the Moon?

N. Demin, a Soviet physicist and mathematician reports that radio telescopes in the U. S. S. R. have carried out deep probing of the Moon and have established that its upper layer consists of a homogenous, slag like, solid porous mass. Radio waves have also established that ice is present on the Moon. However, the chemical composition of the upper layer and the nature of the lunar ice remains a mystery.

New Sunspot

On February 25th, H. B. Boxter, Secretary of the British Astronomical Association, photographed 8 large sunspot. Solar activity has now passed its maximum and a violent outbreak was unexpected. It was noted that strong radio emissions were not present on this occasion.

Life and Outer Space

A new book by V. J. Firsoff, B. Sc., F. R. A. S., on the subject of life, the universe and planetary atmospheres will be published this year by Hutchinson & Co. Further details will follow.

N.A. Comet Seki-Lines

Watch out at the end of March for the new comet Seki Lines. At first it will appear near the sun with a magnitude -5 increasing to +5. Should easily be visible low in the southwest after sunset providing the weather is favourable.

Strangers from Outer Space

This is the title of an article which was serialized during February in "Soviet Weekly" and written by Alexander Kazantsev. It shows quite clearly that learned men in the U. S. S. R. are investigating ancient records and rock paintings for proof of the existence of space beings visiting earth in ancient days. (Credit, H. Lorn, Newcastle-on-Tyne)

Life and the Universe

Because the lecture on filter observations given by Mr. Hyde overran at the last B. A. Meeting, Jackson's talk on "Life and the Universe" has been carried over to the next meeting on March 28th.

The Ashen Light

An article on the Ashen Light and the identification of oxygen lines in the emission spectrum of the planet Venus appears in the March issue of the Journal of the Preston & District Astronomical Society. It was written by the editor of "Space Review."

Dr. Dollfus and the Balloon Project

At the last meeting of the Royal Astronomical Society held in London, Dr. J. Dollfus, Director of Meudon Observatory in Paris, gave an account of his expedition in to the stratosphere for the purpose of detecting H<sub>2</sub>O in the Venusian clouds. This unique expedition was carried out by Dr. Dollfus himself with the aid of a large quantity of atmospheric balloons which lifted a capsule, a telescope as well as Dr. Dollfus to a height of at least 25 kilometres.

Two films were shown. One was coloured and this gave excellent detail of the sunset taken from the stratosphere. One could almost gain a rough idea of the beautiful view observed by Messrs. Gagarin, Titov and Glenn during their orbital flights around the earth.

Mystery Fireballs

On January 13, a meteorite with a greenish hue and a sulphurous smell fell from the sky with a loud explosion over Whitehaven, Cumberland. From January 13-17th, the Cumberland and North-East areas were struck by serious flooding, mystery fireballs, freak storms, large hail-stone and mysterious power cuts.