

# SCORPIO

Journal of the Astronomical Society of Frankston Inc

Vol 1, No. 2

P.O.Box 596, Frankston Victoria 3199

MARCH/APRIL 1992

## FUTURE EVENT

### GENERAL MEETING

18 March 1992

#### Technical Session

Session Leader: Peter Lowe

Subject: Extra-terrestrial Life

Please come prepared to discuss the subject

15 April 1992

Speaker: Bruce Tregaskis

Subject: Variable Stars

## VIEWING NIGHTS

### Society Viewing Nights

None planned until observing site established.

### Public Viewing Nights

14 March 1992 at Ballam Park

11 April 1992

Venue to be announced

## COMMITTEE MEETING

The committee will be held at the Brown's residence on:-

26 March 1992

23 April 1992

28 May 1992

## EDITORS MESSAGE

Don't forget if you have any comments about the magazine, its layout or its contents - please send comments to the Vice President

## SOCIETY NEWS

### HELP WANTED

March 28 - April 3rd

For the third year in succession we are staging a display at the Mornington Environment Week Show. As in the past, our display will be in the club "Astronomy on the Move" caravan. We will have posters, sky charts, handouts and weather permitting, a solar telescope to show visitors sunspots. During the week the local schools will be bringing their students to view the displays so we need members to man our caravan and telescopes.

Laurie McIntyre will be in attendance all week but he will need some assistance and asks that any members who have a few spare hours drop in to help.

This is an important club commitment as we have promised to stage an annual display as part of our quid pro quo for establishing our viewing site at the Brairs Homestead.

If you can help for a few hours ring Laurie on 876-6120

Tony Hales

The Astronomical Society of Frankston was founded in 1969 with the aim of fostering the study of astronomy by amateurs and promoting the hobby of amateur astronomy to the general public. The society holds a General Meeting each month for the exchange of ideas and information. Regular observing nights, both private and public are arranged to observe currently available celestial objects. In addition the Society provides the services of its members for educational presentations or observing nights for schools and local community groups.

### Meeting Venue:

The Peninsula School

Wooralla Drive, Mt Eliza

(Melways Map 105, F5)

Room F6 at 8.00pm on the third Wednesday of each Month except December/January

Visitors are always welcome

### Annual Membership Fees

Full Members \$20

Concession Members \$15

Family Members \$30

Family Pensioners \$25

Membership Fees due 1st July each year

### President

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MtMartha (059)744 204

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Langwarrin (03)776 6309

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Don Leggett, 4 Vellvue Street

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Ken Bryant (03)789 1590

Tony Hales (03)781 3251

Bob Heale (03)787 1748



## SOCIETY NEWS

### SHOULD THE SOCIETY CHANGE ITS NAME.

There has been a fair bit of discussion in recent times about the possible benefits of changing the name of the Society. The Astronomical Society of Frankston was formed in 1969 when most of the population was in the Frankston region. With the enormous increases in population on the Mornington Peninsula, it is considered the name may have become too localised. The Committee is certainly not agreed on the benefits of a name change which will involve some cost to re-register the Society name and it is felt that such a change should be put to the members at a general meeting. Accordingly it has been agreed that the members views will be sought at the March General Meeting.

### COMMITTEE NOTES

The committee meet on the 27 Feb.

The public viewing nights have been quite a success with over \$300 being raised despite several cloud-outs. Further nights are planned in March/April but with the coming of the winter months these will be curtailed until next summer (Whenever that is!)

The application to the Frankston Council for a money grant was modified to cover the cost of obtaining a 4" refractor. This was done because the Council advised that video equipment was already available for free loan. A decision is expected in March

After some discussion about the possible benefits of changing the Society name it was agreed to canvas the membership for their opinion.

The quotations for the Society lapel badge has been received but no action will be taken pending a decision on the Society name.

The newsletter format was discussed and has received favourable comments.

#### Frankston Council Grant

Last December, the Society submitted an application to the Frankston Council for a grant to purchase a refracting telescope. The council provides grants each year to assist local clubs and societies and uses this as a forum to improve the services provided to the Frankston ratepayers. The grants are only provided to local groups. This is the first time our society has applied for such a grant and if successful, this equipment will assist us greatly in our general public education and viewing night programmes in addition to providing real science from our newly introduced special activity sections.

It is hoped we will hear from the council mid March.

### NEW ACTIVITY SECTIONS

At the February meeting it was announced that a number of special activity sections had been formed to help those members who wanted to get into specific activities. The new sections are :-

- 1) Deep Sky Observing
- 2) Solar System
- 3) Variable Stars
- 4) Telescope Making

It is intended to hold separate meetings each month in addition to the general meeting.

Section leaders have 'volunteered' to help each section get off the ground. Section reports will be posted each month in the Scorpio magazine. If you want to get involved contact the section leader or ask at the General Meeting

### LIBRARY DISPLAY

Our exhibition in the Frankston library was incredibly popular with the information sheets going like you wouldn't believe. We had a couple of scopes setup in a cabinet with star charts, a moon globe and other interesting bits and pieces. There was also a small 30mm refractor aimed at the moon globe so the kids (big ones as well!) could see where man first stepped onto the moon, way back in 1969 when our society started. Overall it was a successful two week exhibition despite the local papers forgetting to mention it, attracting many people to our advertised Feb. public viewing night and probably also to our next one on March 14.

The display was designed by Steve Malone, Laurie McIntyre, Tony Hales and Ros Skilton and we thank them for their efforts.

Peter Skilton

### FEBRUARY TALK

The topic for the February meeting, which was very well attended, was Deep Sky Observing given by David Murray. David has been an active deep sky observer for many years and passed along some of his experiences at the talk, in particular the types of objects available to the observer and how to go about finding them. David is an advocate for using a great variety of eyepieces to find the right combination of magnification, field of view and sky brightness to properly observe objects.

It is hoped at the next viewing nights that David can show us some of his techniques.

### PUBLIC VIEWING NIGHTS

The summer programme of Public Viewing Nights has been quite a success. Although the weather has clouded out some of the nights, a good turnout of members has made all viewing nights fun. Public response has been excellent and although the tally has not yet been completed it appears that over \$300 has been raised. More importantly a great deal of interest has been shown by the people who came and we hope that a few will stay on as new members.

It would be remiss not to thank all those members who consistently came to offer their services at these events and a special thanks to Steve Malone for his efforts with the caravan and banner.

### WELCOME TO NEW MEMBERS

It is with great pleasure we welcome the following people as new members of the society:

Beth Fleming, Langwarrin

Luke Hussey, Frankston

Sybil King, Langwarrin

## SPECIAL ACTIVITY GROUPS

### DEEP SKY OBSERVING

This section is open to any member interested in deep sky observing. Some of the things we would like to do will be sketching and astrophotography of different deep sky objects. Logging what we have seen.

The section is opening up with four members. They are David Murray, Ken Bryant, John Cleverdon and Bob Heale.

So come on down and join us on our journey into "Deep Space"

Meetings will held initially at David Murray's place on the first Monday of each month at 8pm

(132 Bay Rd. Mt.Martha 059-744 204)

P.S. Rumour has it that the section will be concentrating on the constellation of Centaurus over the next few months. It will be interesting to see how many objects can be observed. Who will stick to the easy objects like NGC5139 or 5128 or go for some of the real challenges such as the Centaurus galaxy cluster.

First meetings will be 7-March and 4-April.

David Murray

### SOLAR SYSTEM

At this stage I do not know who the section leader for the solar system section is but Peter Skilton has offered to supply a presentation of the planet positions for each Scorpio issue. The section members are:- Bruce Tregaskis, Ken Bryant, Peter and Ros Skilton Evelyn Williams, Carl Moser and Peter Lowe. The section will have to arrange a first meeting so that an observing programme can be discussed.

With regard to the planets, Jupiter is presently at opposition. This means it is best placed for viewing because the skies will be darkest and it will be reflecting light head onto the Earth. Mercury is almost at its greatest Eastern elongation which means the angle between the planet and the Sun is at its greatest as seen from Earth. This means Mercury is best placed for viewing after sunset because it does not set too close to the Sun and is therefore not overwhelmed by the light from the Sun.

Next issue I will try to get Peter Skiltons planetary diagramme printed. I couldn't see how to fit it in this issue.

Peter Lowe.

### VARIABLE STARS

The members of the variable star section are:-

Bruce.Tregaskis, Bob Heale, Peter Lowe, Ken Bryant, Ros Skilton and Peter Skilton.

I do not have any infomation about the first meeting but I will have something for the next issue.

### TELESCOPE MAKING

At this stage the group consists of five members, Steve Malone (destined to take a small 9 month caravan trip soon), Laurie McIntyre, Peter Lowe, Luke Hussry and Ian Fleming. Several telescopes are being made along with a mirror grinding machine. The telescopes being made are:-

- the society 16" mirror which is close completion but refuses to take a final figure. Which probably goes to explain Steves holiday.

- a 10" f/7 being made by Peter Lowe.

- the mirror grinding machine will be capable of handling upto 20" blanks. All the mechanisms except the electric drives have been built and tried out using muscle power. Once a suitable motor and gearbox is found it will start its inaugural mirror.

Mirror making supplies are available for sale from Steve Malone at very good prices.

Mirror Blanks (25mm thick)

Grinding Tools

Grinding Powders

Polishing Rouge

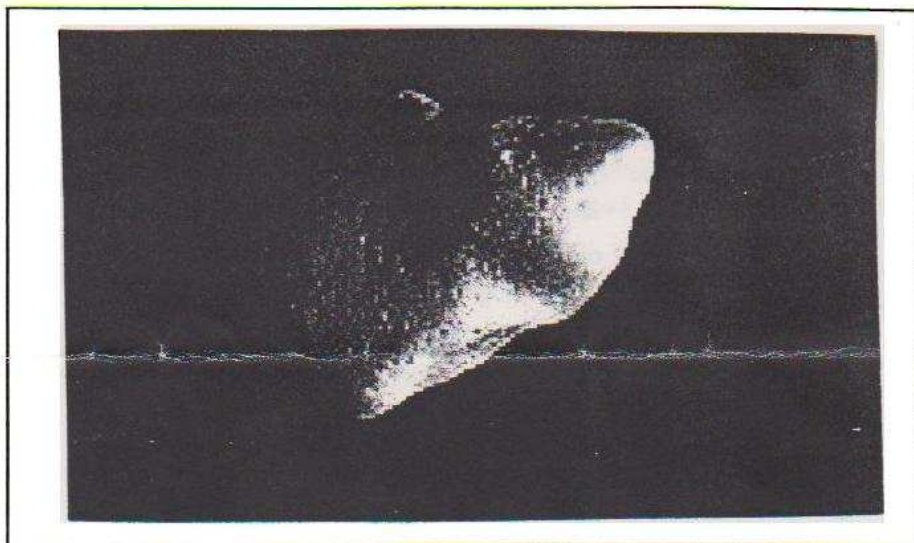
Cerium Oxide

Advice ----- FREE

## WHAT'S NEWS IN ASTRONOMY

### ASTEROID FLYBY

On October 29, the Galileo spacecraft flew past the asteroid Gaspra and took the first close-up photographs of an asteroid. At the time of the encounter Gaspra was some 410 million kilometre from Earth and some 330 million kilometre from the Sun. At closest approach the spacecraft came to within 1,600 kilometre of the asteroid at a relative speed of some 28,000 m/sec. During the encounter 150 photographs were taken from which only one has been sent back to Earth for analysis. The rest have been stored onboard and will be transmitted back when the spacecraft passes Earth again later this year. The Galileo spacecraft is on its way to Jupiter. To reduce the flight costs, it is using a course that has taken it past Venus and Earth



thereby obtaining gravitational assistance to increase its speed.

As can be seen from the photograph above, Gaspra is an irregularly shaped object approximately 12 kilometres in size. It has a high reflectivity (20%) suggesting a mixture of metallic and rocky components. The photograph shows a number of small craters covering the object.

### NAMING VENUSIAN CRATERS

As the Magellan spacecraft continues to survey the surface of Venus, the US Geological Survey has invited the public to propose names for the notable craters and volcanic vents found on Venus. Aside from a few exceptions, all the Venusian features are named after females. Many are named after Goddesses of ancient cultures however craters and volcanic vents will be named after actual women. There are a few rules however:-

- 1) The women named must have been dead for at least three years. {I'm not sure if this means three years after the craters are discovered, three years before the nomination was made or, just that before the name is conferred they must do the honourable thing }
- 2) They must have done something noteworthy or honourable { see point one }
- 3) Names of military or political figures are out.
- 4) Names from the main religions are out
- 5) Names of National Significance are out.

If after all this you can actually think of someone, then your suggestion should be sent to:

Venus Names

Magellan Project Office

Mail Stop 230-201

Jet Propulsion Laboratory

4800 Oak Grove Dr.

Pasadena, Calif 91109

USA

### COSMONAUTS LOST IN SPACE ??

The problems with the breakup of the ex-Soviet Union has left a small problem in space. Namely two cosmonauts are stranded in space aboard the MIR space station. As was reported in the last issue there has been an argument about who owns the Soviet space programme. The Russian government has cut 700 million roubles from the programme leaving nothing to bring the two cosmonauts back. They were promised a landing back in August last year, then October and now March is being promised. It is looking increasingly likely that a call to the Americans is their only hope. Let us hope that the last Soviets in space get back to talk about it.

## Lunar Eclipse Dec 1991

It was the evening of 21 December 1991, and the important tasks of the day were being prepared. The two and a half inch refractor was dusted off and set on its tripod. The new Rand McNally moon map, freshly laminated for the occasion, was set upon the floor. Particular craters on the map were marked with adhesive labels and the trusty red beacon pressed again into service. This time it was the partial lunar eclipse visible from Melbourne a few days before Christmas.

Byron Soulsby from Adelaide had asked amateurs across Australia to time the passage of the earth's penumbral shadow across various craters. The aim was to measure the effect of the eruption of the Phillipino volcano and the Gulf War oil fires on the optical properties of our atmosphere. Predictions to the nearest second had been published in the AJA and armed with a digital watch synchronised to the VNG pips, I awaited the forthcoming sky show. I was confident.

It didn't matter that it had been cloudy all day, after all this was Melbourne, and it could clear up fully just like that. So I sat there patiently, awaiting the moon above the horizon. Then it happened. Total and complete 100% cloud cover. Couldn't even tell the moon was up! Never mind, the eclipse was due to last over an hour and surely it would clear by then.

The clock ticked on and sure enough the cloud cleared..... for 10 seconds! Not much use but I decided to see the rest of the eclipse anyway; not daunted by the set-back. I was rewarded. Two minutes before the predicted end of the eclipse, at 11:03:26 UT the clouds cleared around the moon and sure enough there was no shadow to be seen!!. Probably not much use to Byron but I sent the observations in anyway. Better luck next time

Peter Skilton

## SUNSPOTS AND AURORA

Through the end of February a large number of sunspots have appeared on the face of the Sun. I have never seen so many. My wife and I tried to count them on Feb.24 and lost count at 32 with lots of tiny ones visible but uncounted. There were two large groups of sunspots and through a viewing filter were easily visible to the naked eye. Needless to say there has also been auroral displays. On the night of Feb 25 between 2130hrs and 2230hrs occurred the "reddest" display I have ever seen. Easily spanning 45 degrees of horizon and maybe 30 degrees in azimuth, the display consisted of a general red glow with dark vertical bands. This glow seemed to pulsate in brightness and eventually faded. From 2230hrs onward (till I went to bed anyway) there was a general white glow along the horizon with the occasional faint ray pointing up.

No doubt there will be more displays and I would be interested to hear any reports.

**P.S.** It is very easy to photograph aurora. Just set up your camera on a tripod or stable surface. Set the lens to a wide aperture and take a time lapse photo. Exposures of 10 secs up to a few minutes will do depending on the display brightness. Typically 30 seconds will show the display without showing long startrails. A time sequence of photos makes an interesting project.

**Another P.S.** During this display I noticed that some of the stars in the Southern Cross seemed to be flaring in brightness. In fact it was a sudden brightening of Acrux to well over zeroth magnitude for about two seconds that grabbed my attention. I thought for a while I was witnessing a visible flare. Can anyone explain this to me?

Peter Lowe

## QUESTIONS & ANSWERS

At each general meeting members are asked to put questions into the Question Box after which someone will try to answer. It has been agreed that a few of the better questions should appear in the Scorpio so here goes:-

### What is the reason the Orion Nebula looks green in the telescope?

People often ask why objects look red in photographs but look green to white in a telescope. The answer lies in two areas; firstly the light from objects such as the Orion Nebula is highly spectral. That means there is a lot of the light concentrated into the wavelengths characteristic of the cloud gases. In the case of the Orion Nebula which is mainly hydrogen these correspond to the H-alpha emission line at the extreme red end of the visible spectra and an oxygen line which is in the green. There is also a general white background glow. Secondly the human eye is most sensitive to the green part of the visible spectra and our colour preception requires a lot of light before we see colour. (Try looking for coloured things on a moonlit night. You can only see colour if you turn your torch on) The observer does not see the red H-alpha line unless there is a lot of light so he/she sees a white glow with maybe a faint greenish tinge.

Photographic films are designed to have an equal response to light across the visible spectra and thus record the red explaining why gas clouds often appear red in photographs.

**P.S.** At night astronomers use red lights to see maps and things because the human eye is so insensitive to red light that it would require a very bright light to affect their dark adaption

**PS2.** I have seen red in the Orion Nebula through the Ballarat 26" telescope which can collect enough light to simulate your colour vision. It was awe inspiring. I wonder why we can't have a 26" telescope.

## DISCUSSIONS - ON LIFE IN SPACE

This article has been prepared as a supplement for the Technical Sessions at the March General Meeting and will form part of the discussion papers.

It is a fundamental pre-condition in the study of astronomy, physics or nature in general that the "laws of nature" what ever they are, will be the same where ever we look. And thus when we see the spectral lines of hydrogen in our laboratory gas discharge tubes and the same spectral lines in some distant star, we can with confidence say there is hydrogen there. Consequently we can say that any natural occurrence that we observe, can given the same set of conditions any where else in the universe, will result in the same physical outcome. A delightful example of this was the experiment conducted by an astronaut on the moon who dropped for our amusement a stone and a feather side by side to show they fell at the same rate. No-one questioned that they fell due to gravity. Thus it is my contention that although the formation of life on the Earth has been an extraordinarily complex interplay of natural events, given the same set of conditions elsewhere in the universe we would expect the same outcome: namely extra-terrestrial life. The burning question is will this life be extremely rare and has only developed on Earth because this is the only place in the universe where the right set of conditions has occurred, or is life very abundant and develops where ever the conditions are right? It is the purpose of this paper and will be the subject of the March Technical Session to review what we know about the formation of life and cogitate the possibilities. It is an exploration that I personally find thrilling.

Life as we know it is a chemical process that uses the chemical materials of our planet to form genetic material which plays out its inherent program until death

returns the material to the planet. Every form of life on our planet is derived from the same basic genetic materials but is combined into different combinations that result in bacterium, plants, fish, humans and every other known life form. These chemicals are basically hydrogen, carbon, oxygen, nitrogen, silicon with a smattering of other elements. When an astronomer looks at this list bells start to ring because this list contains the most abundant elements know. The elements from which matter in the universe is made. To start our exploration of the subject let us consider the formation of our part of the universe, namely the Solar System.

Our understanding of the solar system formation is such that we can now recognise similar formations happening in other places such as The Great Orion Nebula. It is believed our solar system formed through the collapse of a cloud of gas and dust. Through some disturbance in the gas, a region of instability occurred and the gas started to collapse by self gravitation. As the gas collapsed the gas density increased resulting in an increase in pressure and temperature. This proto-star reached temperatures of several thousand degrees and became bright enough to heat a large region of the collapsing gas cloud. In the case of our Earth the progenitor gas cloud also contained heavy elements such as oxygen, nitrogen and carbon etc. which had been seeding into the cloud from past supernova. These materials were tied up in chemical bondings to form various ices or dust silicates. When the proto-star heated these materials the ices becomes gaseous leaving the dust particles unaffected. The vast majority of the cloud material fell into the proto-star which continued to collapse as its heat energy was lost to space. Smaller condensations formed in the highly concentrated gases near the proto-star. In most cases these secondary concentrations form other stars thus forming binary systems

but in our case giant gas planets were formed. i.e. Jupiter, Saturn, Neptune and Uranus. The dust matter falling into the proto-star of course did not fall directly into the proto-star but rather spiralled down in a long decaying orbit. This material spiralling down produces a region around the protostar of high dust concentration, eventually some of the dust particles start to "clump" together. Like small fish being eaten by big fish who in turn are eaten by bigger fish so the dust conglomerates into small loosely bound objects. If these planetesimals collide sufficiently slowly they coalesce. For millions of years this coalescing continues until planets start to form. As the planets gain mass their increased gravitational strength draws more matter to them. The planets thus slowly grow through a process of meteor bombardment. The record of this bombardment is still visible on many of the planets, our own moon for example. Eventually almost all of the material is bond up into several planets in circular orbits where the chance of major collision is exceedingly small. To all intents and purposes the Solar System has now formed.

In the case of our Earth the planet grew sufficiently large that the material fractionates to allow the heavy elements, irons, nickels etc a sink to the centre and the lighter elements to float to the surface. The Earth happened to have an orbit such that the surface temperature was between the freezing point and boiling point of water. Thus the planet developed water oceans as it cooled. The planets mass was sufficiently high to retain the heavy gases that were released into the atmosphere by vulcanism.

The conditions of stable temperature through the presence of liquid water and the abundant of heavy elements tied up in such chemical compounds water, sulphur and its oxides, carbon and its oxides and nitrogen set the scene for the first formation.

"self replicating" chemical molecules. By processes that are only just being explored these self replicating molecules reproduced and developed through a sort of survival of the fittest until extremely large and complex molecules formed. Laboratory tests with combinations of these gases have shown that almost any energy source will very efficiently produce a variety of amino acids, sugars and other compounds now essential for biochemical reactions. Once these building blocks are formed the genetic material RNA is produced spontaneously. The type of RNA depends on the initial conditions. A process of "natural selection" occurs as the various RNA are formed. The RNA is progressively destroyed by hydrolysis with water but is continuously being replenished by spontaneous generation as mentioned above. There are thus two opposing reactions: the amino acid building blocks producing RNA through random reactions and the resultant RNA being destroyed by hydrolysis

Millions of RNA chemical species are possible but only a very few are used by life on Earth today. The RNA used by life on Earth has the property of resisting hydrolysis cleavage due to their structure and thus have a better chance of surviving in the "primordial soup of chemicals" Thus only those RNA that can resist the hydrolysis destruction survived to continue in the development of life processes.

To be a successful "self replicating molecule" one must replicate better than the other molecules. Self replication is a competitive process because these is a host of different RNA types formed by erroneous self reproductions and some of the "mutant" molecules will reproduce better than others. The RNA molecules that reproduce with less mutant errors will be most successful at re-generating themselves. Thus their concentration in the "soup" will rise quickly. The accuracy with which a molecule reproduces itself is called its *fidelity*. The best competitor is the mutant

sequence with the most favourable combination of copying fidelity, stability and replication rate. A long process of molecular evolution occurs where the best competitor wins and increases its concentration. There is thus a steady improvement in the fidelity of the surviving molecules. This increased fidelity means that longer and more complex molecules can form and survive. Each new generation of molecule adding some new combination or advantage that increases fidelity. The formation of translation proteins that help collect the right chemicals for the replication process; error detecting proteins and error correcting proteins and finally the development of double strand DNA which added proof reading and error suppression to the copying process. The development of the DNA structure allowed hundreds of thousands of proteins and nucleotides to be copied accurately in one molecule.

The first viruses would have been born in the "primordial soup" using RNA as the principle genetic materials. Eventually the more complex DNA genetic material was formed into the first single cell structures and the transition from inanimate but extremely complex chemicals to the first living things was made. After this the story is essentially complete. The complexity and survivability of this life increased through the development of compartmentisation. Compartmentisation resulted in the formation of cellular organisation which had the advantage providing of protection from the general external environment and maintenance of the chemical raw materials for growth inside the compartment. If the raw materials available to one compartment cell were a better mix than of another then one compartment structure would survive over another. Thus an evolution of compartmentisation lead to even more complex structures like cell membranes eventually with internal structures that we today call nucleated cells. The oldest known fossils are of this type and are found at a place called the North Pole in Western Australia.

For this point on give stable conditions, the development of all the present day life forms is inevitable. Darwinian evolutionary processes would drive all life forms to constantly adapt to the minor environmental variations and ecological niches. While any particular version of life form fish, man or dinosaur may or may not continue the basic genetic processes will continue as long as the planet conditions remain sufficiently stable and suitable.

While this is an enormously oversimplified version of Life, the Universe and Everything it does show how structures as complex as the living things on our planet can spontaneously arise from the basic building blocks of the universe. Who would have thought that from a tenuous gas cloud of hydrogen polluted with a few impurities that basically simple nature processes could eventually produce life.

There is nothing in the story so far that precludes the development of the same life producing conditions elsewhere in the universe. It does raise the questions about what type of life we can expect to find in space and where to look for it.

At the Technical Session we shall consider such questions as:-

What types of star could be expected to produce suitable planets for life to form?

What planetary conditions are needed to start life and keep it flourishing?

Is there anything in the story of life so far that precludes it from happening elsewhere?

What would extra-terrestrial life be like?

What conditions produce intelligent life?

Is there intelligent life on Earth?

I look forward to the discussions.

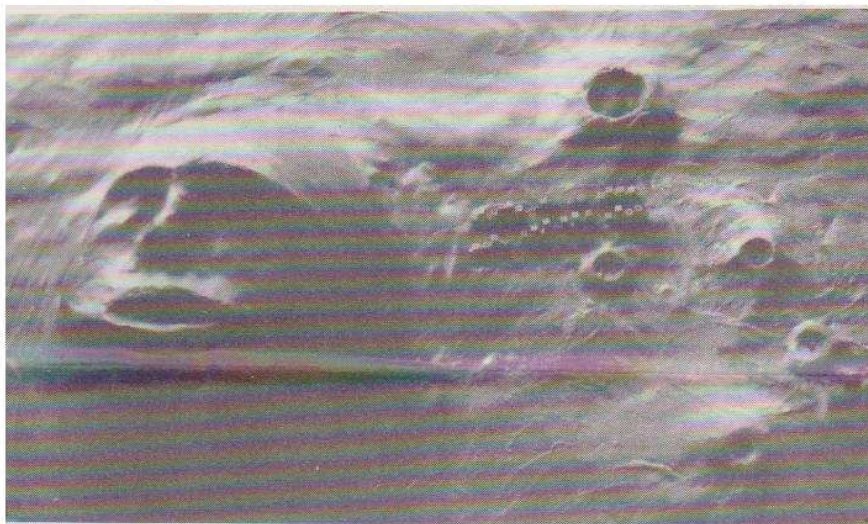
*P.J.Lowe*

# The NIGHT SKY

APRIL 1 1992

The NIGHT SKY is a newsletter produced by The Binocular and Telescope Shop, 310 George St. Sydney NSW 2000, to encourage a greater interest in Astronomy.

## LIFE FOUND ON MARS INCREDIBLE DISCOVERIES!



Groups of buildings clearly evident to the right of the famous face on Mars.

An extraordinary discovery by an Australian-based scientist is causing intense excitement around the world. Dr. Voerden Lantecker, a researcher in hyper-planetary trigonometry has revealed that he has stumbled onto clear evidence of life on Mars.

"The evidence is overwhelming that life has, at some time in the past, existed on Mars," stated the researcher. "Not just amoeba or simple plant life, but intelligent, organized and highly evolved beings who created structures!" When asked if the life forms were human, Dr. Lantecker indicated that there was no direct evidence of the shape or size, but it was fair to suggest this. "We would probably recognize them as being similar to ourselves," he stated.

The evidence for the existence of life on Mars has been circumstantial for many years, now we have direct proof that some intelligent being has lived there. What we don't know is if they are still there now!

The search for life on Mars was begun almost by mistake when Dr. Lantecker received a copy of the computer tape sent back to Earth from the Mars Viking probe. The area he wished to examine contained the famous 'face on Mars' image. Using a newly developed 'fuzzy logic' process he was able to extract far more detail than had ever been seen before. "It's like using a really good graphic equalizer on your stereo to get rid of hiss and crackle. The image becomes much sharper and clearer. By increasing contrast and extending the grey scale we have produced really good images." We found that the 'face' really is a face, and that there are structures nearby which are clearly rectangular with straight sides. They are laid out in a logical sequence like a town or village. These forms do not 'evolve' in nature, they have to be manufactured by beings with intelligent minds who are capable of working with materials on a very large scale. The structures are hundreds of metres long."

Confirmation of the report has come from Associate Professor Sheila Murphy of the Laurel Canyon Astrophysics Observatory, near the famous Jet Propulsion Laboratory, Pasadena. "Dr. Lantecker's work is seamless and precise. We've examined the original NASA computer tapes with Dr. Lantecker's enhancement program, and we can confirm his results!" said the tall, attractive blonde scientist. Dr. Mark Tracy, a specialist in neoplanetary seismology claimed that the evidence was absolutely convincing. "If we wanted proof of extra-terrestrial life, here it is! The extraordinary work by Dr. Lantecker is light-years ahead. He deserves to be awarded a prestigious astronomy award for his outstanding achievement in this exciting field!"

Spokesperson for NASA, Rube Goldberg defended NASA's original dismissal of Dr. Lantecker's work by explaining that they were constantly bombarded by 'UFO freaks' with wild claims. "We don't have the staff to examine every proposal put forward. We thought this was just another crazy idea until we examined the results. The indications are clear and provoking. Life has existed on Mars, and that's now official!" The USA will send a new spacecraft to Mars in 1993. Meanwhile, Dr. Lantecker is using a new multi-array spectrum telescope to scan for any more evidence of life on the dry red planet.

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## OPEN NIGHT

The Macquarie University Open Night set down for the 11th of April is the venue for a fascinating illustrated lecture by Ray Norris, "The Search for Extraterrestrial Intelligence". This will be the latest in a series of lectures which have proved to be highly popular with overflow audiences on each occasion.

The Open Night, starting at 6.30pm, will allow members of Astronomical Societies around Sydney to show off their telescopes and assist the public to observe celestial sights normally too faint to be seen. Telescopes up to 500mm in diameter will be present for the evening.

Proceeds from the evening will go towards the construction of an educational Astronomical Observatory and Planetarium at Macquarie University. These facilities will be available for the use of the public as well as by students and amateur astronomers. Venue is Building E7B, main University Campus; enter from Herring Road or Balaclava Road. Parking is available on-site.

## REFLECTING

Mirror, Mirror on the wall.....

With an upsurge of interest in making mirrors for large telescopes, enquiries are being made by people who want guidance on how to grind, polish and finish their own mirrors.

George Smith, well-known secretary of the British Astronomical Association (NSW Branch), is conducting courses in mirror-making at the Sydney Observatory. Under George's capable guidance you will start with a 250mm disc of glass and end with a highly polished mirror of extreme accuracy, ready to mount in your own telescope. If needs be, you can be assisted to construct your own Dobsonian telescope mount. Contact the Sydney Observatory for details on (02) 241 2478. If you're really lucky, and George is feeling brave he may even demonstrate the now legendary "Hand in Boiling Pitch" trick! This is usually followed by an attempt on the Standing High Jump World Record!

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*the very best!*

## NEW SCOPES

Meade Telescopes of the USA are releasing details of new telescopes this month. They range from refractors of 102mm, 127mm, 152mm and 178mm on new equatorial mounts with optional computerized driving systems to new Schmidt Cassegrain telescopes on mounts which can operate equatorially from alt/azimuth bases.



The multi-coated apochromatic refractors with ED-glass should produce spectacularly sharp and precise images at the eyepiece. The LX200 equatorial mounts will be available with optional electronic drive incorporating the now familiar periodic error correction capability.



The LX200 series Schmidt Cassegrains have massive new fork arms for increased rigidity and accuracy. The telescopes can be operated accurately without polar alignment. Twin motors will automatically drive the telescopes in both axes to keep objects centred. For precise polar alignment an equatorial wedge would be used. The telescope's computer will assist the user to align the base in a couple of minutes. This mode would normally need to be employed only for photographic exposures of over five minutes.

## TELRAD

THE EASY-TO-USE  
ILLUMINATED FINDERSCOPE  
\$79.00 PLUS \$4.00 POSTAGE

## BOOK COLUMN

**BURNHAM'S Celestial Handbooks Vol I, II and III** Over 2000 pages of information on visual observing. These classic books will serve the amateur astronomer well for many years. \$29.00 per volume or \$69.00 the set. (Post \$3.00 per volume)

**EDMUND MAG 6 STAR ATLAS** is highly recommended for beginners, with clear maps and many pages of basic advice on astronomy. \$25.00 (post \$5.00)

**TIRION BRIGHT STAR ATLAS.** Smaller atlas by renowned cartographer Wil Tirion. Maps on one page, information on facing page \$20.00. (post \$2.00)

**CAMBRIDGE STAR ATLAS** colour maps and aspect charts plus lists of objects to observe. \$33.00 (post \$2.50)

**SKY ATLAS 2000.0 Field Edition** by Tirion. Individual sheets with black sky, white stars. \$25.00 (post \$5.00)

## MIZAR TELESCOPES and FILTERS

**K-80** A high quality, 80mm refractor telescope. with a very smooth alt-azimuth head and wood tripod. \$1149.00

**BN-80** A compact telescope for multiple uses. Carry bag incl. \$821.00

**SP-130** 130mm dia. reflector on sturdy precision equatorial mount. \$1638.00

**Miu** Nebula filter. Especially made to suit Tasco, Amasco, Vixen and Jason telescopes. Blocks suburban light pollution. \$69.00

Which Astronomical Society is about to announce its intention to build a 1 metre computer-controlled telescope?  
Which Society is intending to construct the World's Largest Timing Device?  
Who reported a new Supernova only to have it confirmed as a planet?  
Who believes any of the above?