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President's Report

Hi everyone. Life has been very busy for me as I attend to last minute details before leaving my current employment. The upside is that I should have more time available to enjoy my astronomy.

Last month Bernard Kornfield gave us a presentation on "Globular Clusters". It was very interesting and I certainly gained much more knowledge about these faint fuzzies.

I am still networking around the place to arrange guest speakers. At this stage I can confirm that Fred Watson will pay us a visit early next year – he is booked in to February. I spoke to *Australian Sky & Telescope's* Jonathon Nally. He is keen to do a talk for us but no date as yet.

I'm sorry this report is short – my computer has broken down. Hopefully I'll have more to say next journal (via a new computer).
Noel Sharpe President ■

Coming Dates

30/7/05	The Oaks
6/8/05	The Forest (Students Night)
15/8/05	General meeting
27/8/05	The Oaks

Is The Extra-Terrestrial Life in our Solar System?

On ABC Online they say: "Mars may have a subterranean frozen sea".

A frozen sea surviving under blocks of pack ice may lie beneath the surface of Mars, say the scientists from Europe's Mars Express Spacecraft.

BBC NEWS reports: "Martian Gases pose life question." There are small quantities of methane in the atmosphere. The observation is fascinating, because the gas is short-lived; it is broken down by sunlight and should not

be detectable unless it is constantly replenished in some way. Volcanic processes may be producing the gases, although active signs of this have yet to be observed. There is also theory, that microbes are responsible. Some micro organisms on Earth known as methanogens produce methane as a waste product and a number of scientists argue that similar life forms could exist on the red planet too. The Italian Professor Formisano from the Institute of Interplanetary Space Physics in Rome says: "My observations should not be taken as a statement that there is life on Mars today, because we need to go there to drill the soil, take samples, and analyse them, before possible conclude that life is there."

I think it is possible that human beings can go to Mars, but it is very difficult. For a human body to be so long away from Earth can be fatal if something goes wrong. Why can't we build robots, which can do the work for us, to drill in the Mars soil, take samples and so on. Robots are machines and can survive the space and hostile environments on Mars. Later on we could even send robots to Jupiter's and Saturn's moons, so they can find out if there is life there. Saturn's moon Titan is very interesting with its atmosphere and even Saturn's moon Enceladus has an atmosphere. So, I have my fantasy all about this. We are starting to explore other worlds like other intelligent beings may be exploring our Earth. Maybe the occupants in UFO space ships are robots, which can survive in space maybe for thousands of years. If we could send space ships with robots, we could find out what is going on in other solar systems, for instance on Alpha Centauri which is 4

l.y. away from Earth.

I am watching on T V ABC Catalyst "Space Odyssey" how men land on Venus, Mars, on Jupiter's moons Io, Europa and on Saturn's rings. It is very dangerous. Venus very hot and Io is volcanic. The astronauts had to hurry to escape in time. Then an astronaut was hovering over the ice pieces of Saturn's Ring. It is fascinating, but human beings really can't do this. We have to try it with robots.

Ursula Braatz

THE ANTHROPOCENTRIC UNIVERSE

Frank Kish Jan. 2005.

Our learned member Frank Kish has produced another mammoth paper which I have read and find fascinating. It is long enough to be serialised over 5 issues of Prime Focus and I don't have room to include it in this issue. In fact, I am still trying to decide how to break into down into digestible chunks without disrupting the flow of narrative and content.

Just to give you an idea of the subject matter: "Numerous cosmic coincidences of the early conditions in our Universe did encourage certain scientists and cosmologists to make from them an anthropocentric deduction, and to formulate a claim that those coincidences of special conditions *caused* to pre-determine not only the development of our Universe itself, but also the appearance of conscious life on Earth.

This theory was introduced to the scientific community as the *Anthropic Principle*. (A.P.)"

It will start in next month's Prime Focus and I encourage you to read it. RB

Wot IC This Month

18 July – 14 August, 2005

Overhead at 8.00 pm

Jupiter is bright to the northwest followed by Arcturus, then Ophiuchus and Lyra, the Harp Star coming up from the northeast. Scorpius is proudly overhead followed by Sagittarius in his milky cloud.

In the south the Cross and Centaurus reign supreme with the Peacock, the Crown and dominating all, the Scorpion.

The Moon Diary

21/7 Full Moon

28/7 Last Quarter

05/8 New Moon

13/8 First Quarter

Evening Sky Planets

Saturn has finally left us to be behind the Sun on 24th July, before rising in the morning sunrise in August.

Mercury leaves Venus in the sickle of Leo to descend into the twilight glow once again. The next two weeks will give good views of Mercury as the size of its disk grows before it passes in front of the Sun to appear again early August in the morning sky.

Venus lingers in Leo till round 8 pm this month. With a huge disk and shining at -3.8 magnitude it will be mistaken for an aircraft or UFO for sure. Through a telescope you will see the gibbous phase easily as the planet draws closer to Earth in its orbit.

Jupiter, at mag. -1.8 dominates the evening sky reclining in the arms of Virgo having risen during daylight. It will pass 1° north of a first

quarter Moon on 10th August and set between 11 and 9.30 pm near the star 'Porrira' (gamma Virginis), which is a close double star of equal bright components.

Neptune rises round 7 pm, still in Capricornus below and to the right of theta Capricorni. The blue water world will be at opposition at 2 am on 9th August, so this will be its brightest time, mag. 7.8.

Uranus rises in Aquarius as it has for the last year between 9 and 7 pm this month.

Located 2° left and slightly above lambda Aquarii it will begin to head back in a westward direction as the year progresses. It will be mag. 5.7.

Mars rises in Pisces a little after midnight and will be visible till sunrise at mag -0.7. Gearing up for the November show it is already brightly luminous and dominates the northern sky in the early morning hours.

Comets

9P Tempel has had its contact with the Deep Impact probe on 4th July and whatever happens will be returning to normal soon. That is unless the comet has been shattered entirely!

Meteors

The Perseids are active this month and it may be worth looking north in the early morning between 17 July and 24 August. Disappointing in recent years, you may have some luck on the 12th August which is the peak if there is one.

Portraits in The Sky

Ara (The Altar) commemorates the altar on which sacrifices were made to the gods, in both Greek and Roman times. The Romans called it Ara Centauri, harking back to the story of Centaurus and his BBQ sacrifice of Lupus, the Wolf.

However a much older story connects it with the war between the Olympians and the Titans. Because of a prophecy that a child of his would overthrow his rule Cronus, the Titan ruler of the universe, used to eat all his babies as they were born.

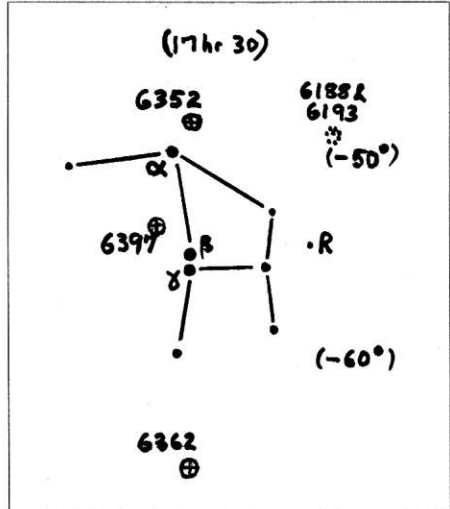
Rhea his wife hid the sixth child Zeus, (Jupiter), who returned after he was grown and forced Cronus to spit out his adult siblings. That's when they set up an altar and swear to overthrow Cronus their father, and the rest of his Titan family.

Another disaffected branch of the Titan clan give Zeus the gift of lightning bolts, and they defeat Cronus after 10 years and the Olympians reign supreme.

The asterism is quite obvious to the naked eye about 30° to the left of the pointers and directly south of the Scorpion's stinger.

The five main stars shine golden white and blue, there are many doubles, and it seems to have been a favourite hunting ground for Mr Herschel and Mr Dunlop.

While there are no Messier objects, the constellation is awash with clusters being less than 30° from the galactic centre.



Double Stars:

There is a string of Dunlop and John Herschel doubles most of which are not too close for small telescopes. Some of the brighter are:

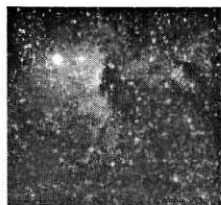
Dunlop 214: 6.0, 9.0 at 31" separation located near Scorpius, and **Gamma Arae** a fixed binary with a rather faint companion: 3.5, 10; separation 18".

h4876 which is also **Dun 206** is a pleasant multiple in the star cluster NGC 6193 (see below): 6.6, 8.5; 1.6"; with a seventh magnitude companion at PA 266° and 9.6".

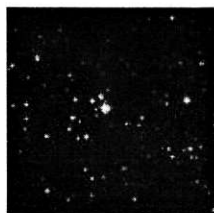
h4866 better known as **R Arae** is an eclipsing binary which varies magnitude from 6.0 to 7.0 every 4.4 days, sep 3.6". I reckon if you watched this for 5-6 evenings you might be able to actually see it moving

Deep Sky Objects:

NGC 6188 is an OB association cluster, which shows up as a milky haze near the border with Norma. Within that haze located 8° west of alpha Arae and 1° north, is a brighter condensation called **NGC 6193** which is a very large open cluster of about thirty stars, with a double star within.



NGC6188



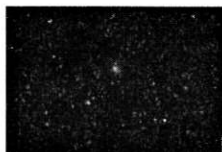
NGC6193

NGC 6397 2.5° NE of beta Arae, forty arc minutes ($40'$) east of epsilon Arae is the brightest of 3 globular clusters. This would undoubtedly have been a Messier if he could have seen so far south.

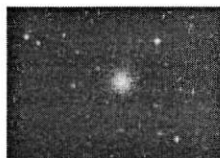


NGC6397

The others are **NGC6352** located within 3° of Alpha Arae and **NGC 6362** which is right away at the southern extreme of Ara and easily found (though faint) using Beta and Delta Triangulum Australae as a guide.



NGC6352



NGC6362

There are a number of small but interesting galaxies in Ara as well.

Now crossing over Scorpius moving directly north we come to Ophiuchus, pronounced Oh-fee-oo-kus:

Ophiuchus

There is some disagreement over the origin of this constellation. It was once known as **ASCLEPIUS**, the Greek god of medicine. One such reference was made in the writings of Eudoxus, in the fourth century BC.

Eudoxus was a prolific writer of scientific subjects. He mapped out the constellations, and the result became the main star reference for hundreds of years.

The story of the man and serpent or dragon came to represent a host of individuals. Among them were Hercules who killed Draco, and Carnabon a King of the Getae, who killed a famous dragon, but most authorities now seem to link the Serpent Holder to Asclepius.

Son of Apollo and a nymph called Coronis, Asclepius was taught medicine by the centaur Chiron. Asclepius became the Argonauts' surgeon, sailing with them on the ship Argo, and he managed to bring back to life a number of people, including the son of King Minos of Crete.

It was after Asclepius tried to revive Orion, bitten by the scorpion, that Pluto began to complain. He argued that if Asclepius healed all the sick, he would have no souls to populate Hades. Zeus agreed; they could not permit men to be immortal. So launching a thunderbolt Zeus ended Asclepius's life.

Zeus later put Asclepius in the heavens along with the Serpent, which had long been a symbol for renewed life.

While the cult of Asclepius began in Thessaly, temples were built throughout Greece, especially near healing springs. Ancient sculpture typically shows Asclepius bare breasted, attired in a long flowing cloak, and holding a staff with a serpent coiled about it.

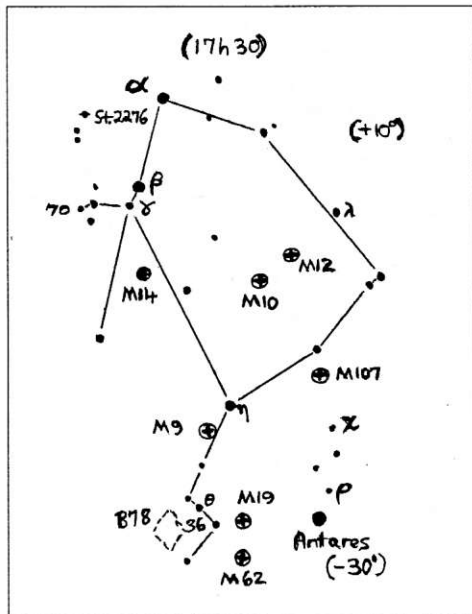
This is perhaps the forerunner of the modern medical symbol of the caduceus.

The constellation Ophiuchus is thus found in the midst of Serpens. The southern part of Ophiuchus dips into a very dense portion of the Milky Way, resulting in a great many deep sky objects.

The Bayer stars of Ophiuchus are fairly bright, five have a magnitude brighter than 3.0. The brightest star, alpha Ophiuchi, is better known as *Rasalhague*, meaning "Head of the Snake Charmer". This is a close star to us, at 54 light years away, and a celestial neighbour of Ras Algethi (alpha Herculis), which lies to the WNW 5°.

Ophiuchus has a half-dozen visual doubles, and even more star clusters. In fact Ophiuchus has more globular clusters than any other constellation.

The region encircling *Rho Ophiuchi* is also of some interest. This area contains several dark clouds and nebulae that show the active formation of stars.



Double stars in Ophiuchus:

Ophiuchus has one of the finest collections of double stars, including several close visual binaries.

Lambda Ophiuchi is a rapid binary. 4.2, 5.2; currently the separation is 1.5".

Xi Ophiuchi: 4.5, 9.0; separation 3.7". ***Rho Ophiuchi***: 5.3, 6.0; separation 3.1".

36 Ophiuchi is a binary with period of 548 years, of two equal stars: 5.1, 5.1; 4.9".

70 Ophiuchi is another close binary with a period of 88.3 years. 4.2, 6.0. In 2000 the separation was 3.7".

Struve 2276 is a very beautiful fixed binary of two fairly faint stars: 7.0, 7.4; separation 6.9".

There are many other genuine binaries with separation angles too close for our small telescopes.

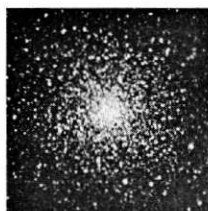
Deep Sky Objects in Ophiuchus:

There are seven Messier objects in Ophiuchus: M9, M10, M12, M14, M19, M62 and M107. These are all globular clusters.

M10 (NGC 6254) and **M12 (NGC 6218)** are nearly identical globular clusters, like tiny explosions of stars with dense cores, and easy to find with binoculars. M12 is 8° north of zeta Ophiuchi and 2° east. M10 is 2.5° SE of M12, with 30 Ophiuchi in the same field.



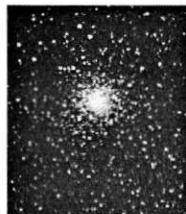
M10



M12

M9 (NGC 6333) is the smallest of the group, unresolved except in large instruments. The cluster is found 3.5° SE of eta Ophiuchi. It is considered to be about 26,000 light years away. In the same field are two more globular clusters: NGC 6342 (1° SE) and NGC 6356 (1° NE).

M14 (NGC 6402) needs a 20-cm telescope to resolve; it's more condensed than the preceding two and slightly fainter.



M9



M14

M19 (NGC 6273) is another very dense cluster, usually described as "oblate", meaning it's a bit egg-shaped. It is about 25,000 light years away. M19 is 7° due east of Antares (alpha Sco), or 2.5° west of the bright double 36 Ophiuchi (and very slightly north, less than 1°).

M62 (NGC 6266) is 6° SW of theta Oph (and 4° south of M19); this is another non-circular globular cluster, a little brighter than M19. (Burnham includes this Messier in Scorpius; nearly all others put it in Ophiuchus.)



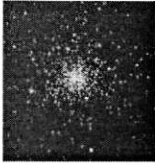
M19



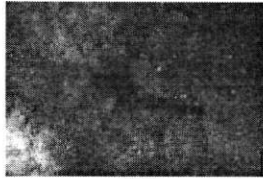
M62

M107 (NGC 6171) is the faintest of the bunch and quite small but easy to find because of a bright guide star. It's 3° SSW of zeta Ophiuchi.

B78, the "Pipe Nebula", is a naked eye dark nebula 2° southeast of theta Ophiuchi, in very rich area of the Milky Way.



M107



B78

Barnard's Star, the most rapidly moving star relative to the solar system is also in this area but you will need an up to date finder chart to locate it.

This is a fascinating part of the galaxy and will reward searching with both binoculars and telescope.

Good seeing

IC



She Should Have Seen It Coming

Just as NASA is celebrating the success of its Deep Impact project – the smashing of a space probe into comet Tempel 1, which raised a plume of comet dust to allow detailed study of the comet's composition – this one came out of 'left field'.

A Russian astrologer, Marina Bai, is suing NASA for \$300 million for "ruining the natural balance of forces in the universe." This amount is the approximate cost of the Deep Impact mission and is compensation for her 'moral sufferings' and the fact that the impact would 'deform her horoscope.'

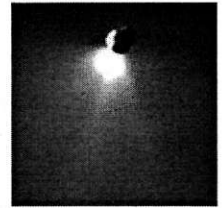
And you thought you had heard it all!

An actual quote from this highly credible astrologer is: "The actions of NASA infringe upon my system of spiritual and life values, in particular on the values of every element of creation, upon the unacceptability of barbarically interfering with the natural life of

the universe, and the violation of the natural balance of the universe."

Gosh – did NASA do all of that?

This is bound to be another case where common sense and science will fall upon deaf pseudo-science ears. NASA has calculated that the impact of the probe would have the same affect as a flea hitting a Jumbo jet. The Planetary Society has pointed out that the mission would merely "put a fresh hole on a comet with very many holes from prior impacts."



If Ms Bai's horoscope is so sensitive, one has to wonder how she copes with the number of comets that are regularly snuffing out of existence as they plummet into the Sun, without any help from NASA. And Comet Shoemaker-Levy-9, when it collided so spectacularly with Jupiter – she must still be panel beating the kinks out of her horoscope.

This is putting aside the fact that until NASA announced their mission's intent, this learned astrologer was probably totally unaware of the existence of Comet Tempel 1 in her fragile universe.

Of course, we know that this lawsuit is hilarious in its inanity, but the worrying thing is... Ms Bai may actually believe her claim. I'm not sure if that's sad or scary.

RB