

# Heavens Above - A Chronicle - 09 - April Nights

As mentioned in the Introduction Section, this is a collection of my columns that specifically relate to things best observed in the month of April. In most cases, they could also be observed in March and May at later or earlier times respectively.

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## 1. Orion Nebula, What a Gas

for 7th April 1999

Before Orion the Hunter starts to disappear over the western horizon, it's time to look at what must be one of the most wondrous and beautiful objects in the night sky. I'm talking about the Great Nebula in Orion.

Located in the middle of the three stars forming the Sword of Orion (or the handle of the saucepan), to the naked eye it appears as a 'fuzzy' star. In binoculars this transforms to a small tight group of stars with a faint haze about it, like a street light in the fog. This haze is the Nebula, a huge cloud of gas, mostly hydrogen, and over 20 light years in diameter. Inside this cloud, stars are being born even as you read this article.

This is arguably the object most watched and loved by amateur astronomers. Although a mind numbing 1,500 light years away, even the smallest telescopes reveal awe inspiring details of gassy wisps, swirls and lanes, all with a teasing hint of green. But colour photographs taken by large telescopes reveal colours that take your breath away. Glorious greens, rich reds, oranges, blues and even purples. A kaleidoscope of colours.

Tennyson, as expected, waxed eloquent about the Nebula. In Merlin and Vivien he wrote:

**"...clusters and beds of worlds, and bee-like suns and starry streams..."**

I like his style.

I mentioned baby stars? Astronomers estimate there is enough gas in the Orion Nebula to form about 10,000 Sun-like stars. A stellar nursery of staggering proportions.

## 2. The Mane Event

For 2nd May 2000

This month comes the Lion. He can be seen directly to the North, 30 degrees above the horizon, lying crouched like a sphinx, facing west, a majestic lion surveying his domain, tail swishing the flies behind him.

Of course I'm talking about Leo, another constellation that looks very much like its namesake - if you stand on your head.

From our viewpoint, the shaggy mane and head of the lion looks like a sickle with the handle pointing upwards. In fact, those six stars are known by the nick-name 'The Sickle.'

In Greek mythology, Leo represents the Nemeaean Lion which was killed by Hercules as the first of his famous Twelve Labours.

The brightest star in Leo, at the end of the sickle's handle, is Regulus, sometimes called "The Lion's Heart" or "The King" and is only 77 light years away. It has a faint red companion star.

The third and fourth stars below Regulus, Gamma and Zeta Leonis, are optical double and triple stars respectively. All are visible in your binoculars.

Leo may have been beaten by Hercules, but he still has his pride.

To the Egyptians, the coming of Leo, which they revered as “The House of the Sun”, marked the coming of Spring and the rising of the Nile. Naturally for us Down Under, the rise of Leo marks the coming of Autumn.

But in modern times, Leo is better known as the point in the sky from which the famous (or infamous) Leonid meteor showers emanate. They come every year in November (early in the morning) but every 33 years they can give a particularly spectacular show. Last year, the expected rain of meteors was hidden by clouds – a big disappointment.

Along and above its belly, there are a number of striking galaxies just beyond the view of normal binoculars but a treat in medium sized (100mm diameter or larger) telescopes. The most popular are the Messier galaxies M65 and M66 (as a close pair) and M95, M96 and M105 as a close triplet.

So take a look to the north at Leo this month as it rides high. But do it quietly, remembering that song (slightly amended):

**“In the heavens, the quiet heavens, the Lion sleeps tonight.”**

### 3. The Crab is a’buzz

for 10th April 2001

In April, the constellation Cancer (the Crab) which nipped Orion (aka Hercules) in the heel is in a perfect viewing position, directly to the north about 45o above the horizon. Its five main stars are faint but form a large Y in the sky, about three times the size of the Southern Cross. You should be able to spot it above and to the east of the bright Gemini twin stars, Castor and Pollux.

If the Moon is favourable, you have a good chance of spotting the Y shape of Cancer and, more particularly, its star attraction (sorry!), the popular M44 or Beehive Cluster.

The Beehive is located just below and to the west of the star at the centre of the big Y. It is a cluster of faint stars, each barely visible to the naked eye, but put together appear like a misty nebula about three times the size of the Moon. However, binoculars show this to comprise a swarm of about fifty stars, like bees around a hive.

History tells us that the first person to see the Beehive in a telescope was Galileo in 1610, though we don’t know if he gave it its name. Galileo’s telescope magnification was probably only a bit better than your binoculars. In fact, because of their low magnification, binoculars are the ideal way to enjoy M44. But don’t expect to get any honey. It’s over 500 light years away.

### 4. Three Crosses for Easter

for 13th April 2004

As we come to the end of the Easter season, it is appropriate that if you were to go out this week after sunset and look southwards, you would see three unrelated asterisms that are silent reminders of the traditional Easter story.

High in the south, side by side, are three crosses, like those at Golgotha. On the left is the well-known Southern Cross, or Crux, easily recognized by most Australians. At around 9pm, Crux’s top is leaning a bit to the left.

Then, about 25o to Crux’s west is a larger cross, the aptly named False Cross, because often people mistake this for the Southern Cross. False Cross is actually a mix of four stars from the constellations Vela (two on top) and Carina (two below.)

Then, exactly in the middle, but with its top level with Crux’s lowest star, is a third cross. Though not overly emphasized in astronomy, it bears the name ‘Diamond Cross.’ Probably because it looks like a perfect diamond shape. Or perhaps because its top star is in fact a beautiful cluster of about 60 stars, twice as wide as the full moon and commonly referred to as ‘the Southern Pleiades.’ It looks beautiful in binoculars and, in this season, could be thought of as a royal crown.

At around 8pm or 9pm, all three are leaning to the east. But if you were to wait for midnight, all three would be standing perfectly upright, as on a green hill far away.

### 5. Show them Your Cross

for 4th April 2006

(This is an expanded version of the previous column for 2004.)

This month around 8pm the three crosses are flying high in the south, very apt for Easter. In particular the False Cross is nicely placed due south and 60o above the horizon, though on its side. This part of the sky, in the constellation of Carina, has some wonderful open star clusters, visible as filmy blurs to the naked eye and showing up beautifully in binoculars.

For starters, follow the long axis of the False Cross and just past the bottom right hand star you will see a faint shimmer of stars. With binoculars this breaks forth as a sparkling kite (or cross) shape of about eight stars with a school of fainter stars inside. This is NGC2516, or ‘The Southern Beehive’.

Below the False Cross is another regularly shaped cross called The Diamond Cross. The bright star at its eastern end is called theta Carina. However, in binoculars it becomes the brightest star in a lovely group of about eight stars with a number of fainter ones. This pattern of stars has led to the nick-name ‘The Southern Pleiades’.

And that’s just the beginning. Scan the area and enjoy.

## 6. Here Comes The Bridesmaid

for 18th April 2006

There is a star we see almost every night of the year but no-one pays any attention being overshadowed by its famous partner. Always the bridesmaid etc. I'm talking about beta Centauri, the Pointer star closest to the Southern Cross.

We all know that alpha Centauri (the Pointer furthest from the Cross) is the closest star to our Sun at a distance of 4.37 light years, it is the sky's 3rd brightest star and it a beautiful binary star comprising two stars similar to our Sun.

But what do we know about beta, the sky's 11th brightest star? Not much, really, so lets remedy that. Beta (also called Hadar) is a whopping 525 light years away (over 100 times further than alpha) and is a blue giant star. That means it is very big and hot. As it is so far away but appears almost as bright as alpha, you can imagine how much brighter it must really be. It is also a binary star, but its companion is so close you need a very big telescope to split it.

So spare a thought for the bridesmaid Pointer.

## 7. L is for Love's Locks

for 16th May 2006

Visible this month directly North and about 30o above the horizon is a very faint constellation, Coma Berenices, which tells a tender love story. The three main stars, too faint to identify in the city's glow, form a large reversed L, to the west of the bright orange star Arcturus in Bootes. However, if you extend your right arm with hand spread and the tip of your little finger on Arcturus, just to the left of your thumb, you should be able to see a sprinkling of faint stars. With binoculars, you will see a beautiful wide cluster of stars, with a suggestion of a V shape.

These represent the tresses of amber hair sacrificed to Venus by Berenice, wife of Pharaoh Ptolemy Soter III, for his safe return from war.

But when Ptolemy returned he found his wife's lovely tresses had been stolen. The priests were saved from the sword by the Court Astrologer who announced the gods had taken Berenice's hair and placed it in the sky for all to admire.

The cluster is visible to the naked eye as, in a poet's words:

*"curious twinkling, as if gossamers spangled with dew drops were entangled there."*

## 8. Stars Worth Swatting

for 30th May 2006

If you look at the Southern Cross and trace its long axis downwards about one cross length, you will come to four fainter stars in the shape of a trapezium, narrow at the top, wider at the bottom. These are the four brightest stars in Musca - the Fly. Since it is so close to Centaurus, the half-man half-horse, I often wonder if its namers were having a private joke.

There are other stars in Musca which, seen from darker skies away from city lights, help make up the vague shape of that insect.

But the four main stars are very distinctive beneath the Cross and easily found. With binoculars, look at the bottom star on the eastern side. Just above it on a dark night, you should see the faint fuzzy patch of a globular cluster called NGC 4833. This vast island of ancient stars is 18,000 light years away.

Why am I so fond of Musca? For reasons unknown, astronomers changed its original name. But for some time past, that group of stars was called... Apis - the Bee.

## 9. North versus South

for 26th April 2005

As Annie Oakley sang: "Anything you can do, I can do better", as it would seem the southern hemisphere says to the northern, and visa versa. There are a number of constellations and deep space objects that smack of "me too" but in a nice kind of way.

Of course we have the famous Southern Cross constellation, but there is also a Northern Cross in the form of the constellation Cygnus, the Swan. Its spread of stars from beak to tail, wingtip to wingtip forms a larger cross low on the northern horizon (though not till August).

Then there are constellations Triangulum (near Andromeda) and Triangulum Australe (Southern Triangle) just to the east of Alpha Centauri.

However, the real 'me-toos' are a pair of clusters. In Taurus, there is the famous Pleiades (or Seven Sisters) cluster. But in the southern constellation Carina, at the very top of the asterism called the Diamond Cross, the bright star Theta Carinae is surrounded by a beautiful binocular cluster of about 60 stars, IC 2602, which is also known as "The Southern Pleiades".

Also, below the foot of the infamous False Cross (to the west of the Diamond Cross) is a naked eye and binocular cluster of around 80 stars NGC 2516. This is also known as "The Southern Beehive" in competition with the famous Beehive cluster in the constellation Cancer to the north.

One-up-manship? No – everyone’s a star.

## 10. Diamond in the Sky

for 1st May 2007 (an April tail-ender)

There’s a diamond in the sky this month, due south and about 45° above the horizon. After sunset, if you find the Southern Cross, look about a hand-span below and to the west and you will see four stars in a uniform diamond shape. They will be almost upright at around 9pm. Further to the west of this diamond, you will see the False Cross. Don’t confuse the two.

This ‘diamond’ has been named the Diamond Cross, in the constellation Carina, for obvious reasons. But it deserves that title for another reason. The top star of the Diamond Cross is Theta Carinae, but it is only the brightest member of a beautiful cluster of about 60 stars, named IC2602. On a dark clear night, your naked eye can make out not only Theta but some of its brighter companions. If you look at Theta through binoculars, you will see the full cluster very clearly. It is beautiful and has been given the name ‘the Southern Pleiades’ because of a similarity in shape.

But to me, it lends an impression of a sparkling jewel atop an engagement ring – hence, the Diamond. Still a girl’s best friend.

## 11. A Thought for the Under Dog (or Lion)

for 14th April 2009

When you pop out this week to admire the ringed planet Saturn lying just 16 degrees to the east of the bright star Regulus which is directly north atop the Sickle pattern, you’ll be looking at the part of the sky occupied by Leo, the Lion. However, in the true Aussie spirit, you might spare a thought for another constellation, a true underdog. Though in this case it would be an underlion. I’m talking about Leo Minor, “The Lesser Lion”.

At least, the real underdog Canis Minor “The Lesser Dog” can be easily found, east of Orion and above Gemini’s twins Pollux and Castor. But Leo Minor?

Its stars are all 4th magnitude or fainter, so hard to identify without a chart. But they are there, about a sickle’s length directly below Leo’s Sickle. Its shape, an upside-down crouching lion, can be described as a flattened diamond. The Polish astronomer Hevelius introduced Leo Minor in 1687, presumably to fill the gap between Leo and Ursa Major. It has no major objects of interest.

Like all underdogs, Leo Minor misses out on all the headlines.

## 12. A Camouflaged Constellation

for 28th April 2009

Let’s look at another easily overlooked constellation. This one is to the south, and though it may be missed because it is faint and of unspectacular shape, there may also be another reason. It’s camouflaged. Well, isn’t that what chameleons do?

Around 1600 AD, the Dutch navigators Keyser and de Houtman introduced this new constellation to the sky charts. Chamaeleon, the Chameleon. It can be found about 2.5 cross lengths beneath the Southern Cross. At this time of the year around 8pm, its four brightest stars, all 4th magnitude, take the shape of a long squashed diamond pointing east to west, about 12 degrees long and 2 degrees high. This can be imagined as the camouflaged creature laying on a branch, waiting for Musca, the Fly, immediately above it on the left, to become its dinner.

If you can find it, there are a number of pretty double stars to be seen in binoculars. Start at the western end and work your way across to the eastern point (its nose?) There is a smattering of pretty pairs of colours ranging from white to yellow, orange and blue. Like a chameleon.

(WATCH THIS SPACE FOR FUTURE APRIL NIGHTS ARTICLES)

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