

# Heavens Above - A Chronicle - 15 - October 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 October. In most cases, they could also be observed in September and November at later or earlier times respectively.

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### 1. A Grouse Time for Grus

for 2nd October 2001

This time of the year is perfect for finding a very distinctive constellation in the sky. You may have to crane your neck to see it (sorry for that pun), but that's appropriate as I'm talking about Grus (pronounced goose) – the Crane.

If you go out anytime in October after sunset and face south, then look straight up overhead, you will see a grouping of 2nd and 3rd magnitude stars that looks like a large dagger with its hilt running east to west, the short handle pointing south and the long blade facing north over your head, but badly bent towards the north-west. It's about twice the length of the Southern Cross.

This constellation, like many others, had a long path to its current name. In earlier times it was counted as part of the constellation Piscis Austrinus (The Southern Fish), then in 1598 Plancius separated it out as a crane. Sixteenth century Dutch explorers Keyser and Houtman catalogued it as The Heron, but in 1603, the great sky cataloguer Bayer showed it to represent the long necked water bird, the Crane. A contemporary of Bayer tried to rename it as The Stork, but the stork never stuck and it has remained as The Crane. However, it was well known before all that to the ancient Egyptians as the flamingo, which was their symbol for the office of Astronomer, presumably because it soared high in the sky above them.

Actually, you can picture a crane in this grouping (or flamingo or heron or stork). The stars to the east and west represent its wings spread in flight, the short length to the south suggests dangling legs, while the long curved arc of stars to the north is the neck and head.

If you have binoculars, check out the stars in the neck. Midway along it are two sets of widely separated double stars. Each double is so wide, you should be able to split them with your naked eye.

With a little practice, you should be able to look up and spot Grus in a single glance.

### 2. Gone Fishing

for 16th October 2001

Since last column we looked at Grus, the Crane, it's appropriate we now look at the crane's food, namely fish. Swimming just to the north of Grus and directly overhead this month is the constellation Piscis Austrinus, also know as Piscis Australis, the Southern Fish.

This constellation was well known to the ancients, and forms part of the mythology that led to the zodiac. In fact, Piscis Austrinus is supposedly the fish that spawned the two fish of Pisces.

The stars of this constellation form a kind of Uluru shape, with its flat base closest to Grus. But if you use your imagination, you can pick out a large diamond shaped body at the east end, with a triangular tail to the west, just like a bream.

You can't miss the brightest star in Piscis Austrinus. It's the sole 1st magnitude star in that part of the sky, a bright blue-white star only 22 light years away.

This star is Fomalhaut, meaning 'mouth of the fish' and is the 18th brightest star in the sky. It has also been called 'The Solitary One' because it is the only star of its brightness in that large part of the sky.

Piscis Austrinus also features in the folk-lore of the many diverse cultures that have a Great Deluge as part of their heritage (such as

the great flood with Noah's Ark in the Bible). To the north of Fomalhaut is the constellation Aquarius with its water jug asterism. Aside from the Greek story of the water bearer Ganymede, other cultures see the large sprinkling of stars heading south of Aquarius as the waters from their flood. Fomalhaut is seen as the mouth of a great fish that swallows the flood waters and returns the dry lands.

So once you spot Fomalhaut, which is the part of the fish that Rex Hunt kisses, work westward to find the rest of the fish. But be quick about it or Grus may snap it up for a meal first.

### 3. Toucan Play this Game

for 30th October 2001

We're still looking south this week, towards the constellation Tucana, the Toucan. There are two very interesting objects in Tucana, both very close to each other.

Face south and find Grus, the crane, high overhead. Remember it looks like a large flying crane with its neck bent to the north west.

Tucana lies immediately below Grus, halfway to the South Celestial Pole, but we're not interested in the constellation's stars (not this time). Stretch your arm out, with the hand's fingers spread and your thumb directly below the little finger. Put the tip of your pinky on the bright star at the centre of the crane. For an average adult, your thumb should rest right on top of the objects we're looking for. These are the Small Magellanic Cloud (SMC) and the globular cluster 47 Tucanae.

In a dark sky, to the naked eye the SMC should look like a small cloud fixed in the sky, with 47 Tucanae looking like a fuzzy 4th magnitude star just to its right. The SMC is a satellite galaxy to our Milky Way, only 190,000 light years away. It has about 2 billion stars in it. With binoculars, you should be able to see clumps of stars and swirls of gas clouds.

Just to the right of the SMC, in the same field of view in binoculars, you can see a glowing fuzzy patch, like a furry tennis ball. This is the magnificent 47 Tucanae, the second brightest globular cluster in the sky, containing at least 1 million stars and 15,000 light years away. But because it looks like a star to the naked eye, it has a star's name. Little did the early astronomers know what a wonder lies in that simple 'star.'

### 4. A Toucan Star

for 14th October 2003

This month is an ideal opportunity to view one of the great binocular objects in the sky. It is 47 Tucanae (or NGC 104.) Don't be put off by the fancy name. We know and love it better as 47 Tuc.

The southern hemisphere sky is the keeper of the three best globular clusters in the entire sky. The biggest and best is Omega Centauri, which has been discussed elsewhere. Indisputably, the next in grandeur is 47 Tuc. It has this name because it was initially thought to be a star (in the constellation Tucana, the Toucan) before someone pointed a telescope at it. Boy, were they surprised!

To find 47 Tuc, go out around 8 or 9pm (later is better) and face due south. Look up from the horizon about 45 degrees (that's halfway between the horizon and directly overhead.) You'll see a faint smudge of cloud about 7 times larger than a full Moon. That's the Small Magellanic Cloud, a satellite galaxy of our Milky Way. (Don't be confused by Large Magellanic Cloud below and to its left.)

On a good dark sky, almost touching this cloud at its top right you should be able to see a fuzzy 4th magnitude star. That's 47 Tucanae. If you have binoculars, you will see a beautiful circular smudge, like a street light surrounded by bogon moths, or a compact ball of fairy floss. This globular cluster is relatively close at 16,000 light years and contains hundreds of thousands of stars jam packed like shoppers at a Boxing Day sale.

Point even a small telescope at it and you will be gob-smacked. Some people believe that is even more beautiful than the great Omega Centauri, as it has a prominent central core with its outer stars thinning towards the edge.

### 5. And They're Racing

for 19th October 2004

As Melbourne Cup fever approaches again, so do the two horses in the sky. We won't count the two half-horses, half-man that make up Sagittarius and Centaurus.

From now until Cup time, the constellations Pegasus and Equuleus are directly north and 30 to 40 degrees above the horizon. As nags go, they are similar, but as constellations, they couldn't be more different.

Equuleus, the Little Horse, is the second smallest constellation in the sky and only represents the head of its horse. There are only four stars, like a reverse capital L, just to the left of the head of Pegasus, but it has no associated legend. Unless you have a star chart, it is extremely difficult to find.

Pegasus, however, is an obvious and distinguished constellation with stories galore. Its most striking feature is its torso, the Great Square of Pegasus, outlined by four stars, each over 15 degrees apart, with very little else in its center. The neck and head spring from the top left and point towards Equuleus and Aquila. Its front legs jut out from the Square's bottom left. And that's it... no rear legs. That's because it is emerging from the sea where it had been born after Perseus had cut off the Gorgon Medusa's head and the blood had dripped into the ocean. Poseidon, god of the seas commanded that the blood and sea give birth to a son, and so Pegasus, in the form of a horse, was born.

Pegasus would be handy in the Cup, as he grew wings and could literally... fly. And that is the beginning of another story... some other time.

## 6. Here Comes Flipper

For 16th October 2007

Dolphin sighting to the north. About 40 degrees above the horizon to the north, you will spot a very distinctive set of four faint stars in the shape of a parallelogram, or a kite, about 5 Moons long. There is another faint star just above. You'll need to let your eyes adjust to the dark first. These are the main stars of the constellation Delphinus which represents one of the dolphin messengers of Poseidon. In fact when the beautiful sea nymph Amphitrite fled and hid from Poseidon when he courted her to be his bride, the dolphin searched and found her. He pleaded a convincing case on Poseidon's behalf and Amphitrite married the sea god. Poseidon was so grateful to the dolphin that he placed him up amongst the stars, thankfully in an area of the sky known as 'the sea'.

It's a pretty group and fits neatly into the field of a pair of binoculars. It seems to have retained the name "Job's Coffin" for reasons totally lost these days.

While home to a small number of faint deep sky objects, Delphinus' greatest novelty is in the names of the group's two brightest stars. The top star is Rotanev while the left hand one is called Sualocin. Very unusual names for stars. Turn the letters around and you have Nicolaus Venator, the latinised name of Niccolo Cacciatore, the brilliant assistant to the Astronomer at Palermo Observatory in the 1800s who managed to get his name immortalised in the sky. This cheeky chap was later rewarded by being appointed Astronomer at Palermo.

Perhaps this just goes to prove that dolphins are lucky.

## 7. Neptune Acts the Goat

for 7th October 2008.

The constellation Capricornus is riding high (70 degrees above the horizon) in the northern sky this month, above and to the east of the bright star Altair in Aquila. It's an indistinct set of 3rd and 4th magnitude stars, looking like a child's paper admiral's hat, or maybe a triangular roof cap. Its brightest stars form wide pairs at each bottom end. It represents the goat god Pan who was tried to turn himself into a fish as he jumped into the Nile to escape the Titan monster Typhon. Unfortunately his transformation was only half successful, his top half remaining goat.

"I'm Capricornus and I'm no goat,  
My bottom half's fish so I can float.  
I splash and I paddle – yes, you may smile –  
But it takes me from Typhon up the Nile." (R.Bee)

Of special interest is that as the planet Neptune's year is 164.8 Earth years it has almost returned to the spot where found 162 years ago in 1846, in Capricornus. It is currently about 2.2 degrees below the left star of the two eastern corner stars of Capricornus. The two stars and Neptune form a right angled triangle. You should be able to see Neptune in binoculars as a very faint bluish star. It is clearly visible as a blue star in even a small telescope. Not bad for a ball of gas 4.4 billion km away and only four times Earth's diameter.

## 8. A Long Maned Square

for 27th October 2009

The most prominent constellation to our north this month is marked by a huge square – the Great Square of Pegasus. Like a TV screen with a 20 degree diagonal (just under an extended hand-span), it is directly north and about 30 degrees above the horizon. That square represents the torso of the fabled flying horse, rising out from the sea. All four stars of the Square are 2nd magnitude, the brightest in that part of the sky with little else between them and so are easy to spot. Other stars to its left mark his head, neck and front legs.

Pegasus, according to Greek mythology, was a gentle and friendly horse, which is very strange when you consider who his parents were. His dad was Neptune, King of the Sea (not known for his gentle nature) and his mother was Medusa, one of the three fearsome Gorgons. Look at Medusa with her sea-snake hair and you died, turned to stone. Definitely not his parents' son.

Pegasus features in the romantic tale of Andromeda, a beautiful maiden who is in the stars to Pegasus's lower right. But that's another story.

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