

## Skynotes July 2009

### Month Highlights

This month marks the 40th anniversary of the Apollo moon landings. On the 21st, at 12:39pm (AEST), Neil Armstrong became the first person to set foot on the Moon. In the three years that followed a total of 12 men had the adventure of a lifetime, leaving Earth behind and experiencing life on another world. NASA's Constellation Program is working towards returning mankind to space, venturing to the Moon by 2020 and then on to Mars. The program is sure to inspire a new generation of space followers.

### Winter School Holidays

Scienceworks is opened daily from 10am – 4:30pm. During the school holidays (27th June – 12th July) planetarium session times are:

11am & 1pm: **Tycho to the Moon**

12pm, 2pm & 3pm: **Search for Life: Are we alone?**

See the Melbourne Planetarium's [What's On](http://museumvictoria.com.au/planetarium/whatson/) (<http://museumvictoria.com.au/planetarium/whatson/>) listing for more details.

### Planetarium Event

#### Discover the Night Sky – August 2009

The Melbourne Planetarium at Scienceworks presents its popular after-dark sessions, **Thursday evenings from 6 to 27 August** at 7pm. All evenings include complementary wine and cheese, the opportunity to chat to the Planetarium's astronomer and to be immersed in a planetarium experience. You will finish the evening stargazing through telescopes (weather permitting).

Each evening will showcase a different aspect of the night sky. For more information, pricing or bookings please see its [What's On listing](http://planetarium/whatson/discover-the-night-sky/) ([/planetarium/whatson/discover-the-night-sky/](http://planetarium/whatson/discover-the-night-sky/)) or call Scienceworks Booking Office on 9392 4819 between 9am and 4:30pm, Monday to Friday.

### Sunrise and Sunset Times

		Rise	Set
Wednesday	1st	7:36	5:11

Saturday	11th	7:34	5:17
Tuesday	21st	7:29	5:24
Friday	31st	7:21	5:32

### Moon Phases

Full Moon	Tuesday	7th
Last Quarter	Wednesday	15th
New Moon	Wednesday	22nd
First Quarter	Wednesday	29th

The Moon will be at *perigee* (closest to Earth) on **Wednesday 22nd** at a distance of 357 464 km.

The Moon will be at *apogee* (furthest from Earth) on **Wednesday 8th** at a distance of 406 232 km.

### Let The Moon Be Your Guide

The Moon can be used as a pointer to find other objects in the sky.

- On the 1st the waxing gibbous Moon can be found near **Spica** (*Virgo, the maiden*).
- The Moon is very close to the red supergiant star **Antares** (*Scorpius*) on the 4th.
- During the evening of the 10th the Moon rises just to the left of bright **Jupiter**.
- On the morning of the 18th the waning crescent Moon can be found near the star cluster **Pleiades** with **Mars** sitting to the right.
- Before sunrise on the 19th the Moon sits just below and to the left of **Venus**.
- After sunset on the 24th a very thin crescent Moon sits above **Regulus** (*Leo, the lion*).
- During the early evening of the 25th, the waxing crescent Moon lies to the left of **Saturn**.
- On the 28th the Moon is close to **Spica** (*Virgo*).
- On the night of the 31st the Moon joins **Antares** in *Scorpius*.

### Planets

**Mercury** cannot be seen this month as it moves too close to the **Sun**.

**Venus** can be seen at the start of the month near the red planet **Mars**. The two are found in the north-east sky just before sunrise. As the month goes by, Venus drops lower in the sky. It sits to the left of the red giant star **Aldebaran** (*Taurus, the bull*) on the morning of the 13th. On the 19th the thin crescent **Moon** sits to the left of Venus.

**Earth** reaches *aphelion* on Saturday 4th. This is when the Earth is at its furthest point from the Sun for the year. It is a coincidence that this occurs during our winter; changes in the distance between the Earth and Sun are small enough that they do not significantly affect the temperature on Earth.

**Mars** begins the month with **Venus** in the north-east sky at sunrise. The pair can be seen above the bright star cluster **Pleiades** (*Taurus, the bull*). The two planets will slowly drift away from each other. On the morning of the 18th the **Moon** is to the left of Pleiades, and Mars can be found to the right of the star cluster.

**Jupiter** rises in the east around 9pm. Sitting very close to Jupiter, although not visible to the naked eye, is the planet **Neptune**. By morning Jupiter can be seen in the western sky. The **Moon** sits just above Jupiter on the night of the 10th.

**Saturn** can be seen for a few hours each evening in the north-west sky. It is slowly following the bright star **Regulus** (*Leo, the lion*) towards the north-west horizon. After sunset on the 25th the crescent **Moon** sits to the left of Saturn.

## Meteors

While July doesn't have any strong meteor showers, there are a number of minor showers that combine to produce good results during the later half of the month. The area of sky to watch is around the constellations of *Aquarius* and *Capricornus* and as always, the best time to spot meteors is after midnight. The main meteor shower for July, the *Southern Delta Aquarids*, peaks on the 28th.

## Stars and Constellations

In the west in the early evening is the kite shape of *Corvus, the crow*, sitting just below the bright star **Spica**, in *Virgo*. The *Southern Cross* is high in the south while the bright stars **Canopus** and **Achernar** are found low to the southern horizon.

Almost overhead, *Scorpius* takes up a large part of the sky with the hook shape of its tail. Sitting below the tail of *Scorpius* is the teapot shape of *Sagittarius*.

## International Space Station

From Earth, the ISS appears as a bright star that steadily moves across the sky. It can often be seen from Melbourne, for example at:

6:56am – 7:02am, Tuesday 14th July.

The Station will first appear above the north-west horizon and travel past **Jupiter** before disappearing in the south-east.

Predictions of when to see the ISS can be obtained from the [Heaven's Above website \(http://www.heavens-above.com\)](http://www.heavens-above.com).

## On This Day

**4th 1997**, *Mars Pathfinder* (NASA) lands on **Mars**.

**4th 1054**, Chinese and other astronomers witnessed the supernova explosion that produced the *Crab Nebula*.

**6th 1687**, Isaac Newton (UK) published 'Principia Mathematica'.

**10th 1962**, *Telstar* (USA) the first private telecommunications satellite was launched.

**11th 1979**, *Skylab 1* (USA) was destroyed during re-entry over central Australia.

**14th 1965**, *Mariner 4* (USA) made the first controlled flyby of **Mars** and returned the first close-up images of the planet.

**15th 1975**, first USA/USSR space project *Apollo-Soyuz* was launched.

**17th 1850**, W.C. Bond and J.A. Whipple (USA) take the first photograph of a star.

**20th 1969**, *Apollo 11* (USA) lands on the **Moon**. At 12:39pm AEST (21st) Neil Armstrong became the first person to walk on the Moon.

**23rd 1999**, The *Chandra* X-ray Observatory (USA) is launched from the space shuttle Columbia.

**25th 2000**, The *International Space Station* starts to take shape with the installation of the Russian Service Module.