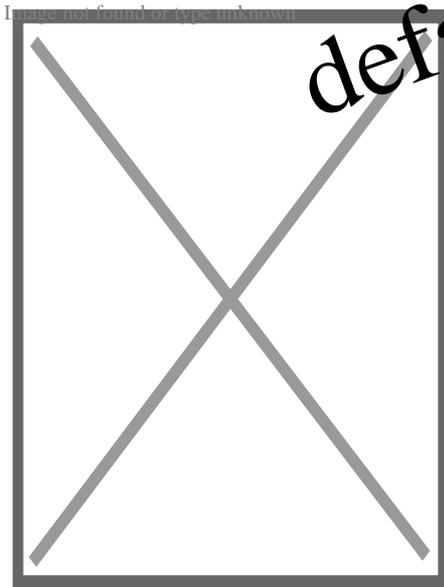


Starry Eyes for the Southern Skies

Description

December 3: One of the things I wanted to be sure to do down here in Australia is stargaze! Astronomy is in my roots and I have never seen a clear southern sky. Those of you who know me know that I went to [Antarctica in 2006-2007](#), but remember that I was there during the Austral summer so the Sun was up 24 hours each day and just moved in a circle along the horizon. Even in New Zealand, where we stopped on the way down and back, it was cloudy at night. That was really disappointing since [Comet McNaught](#) was visible and I didn't get to see it.

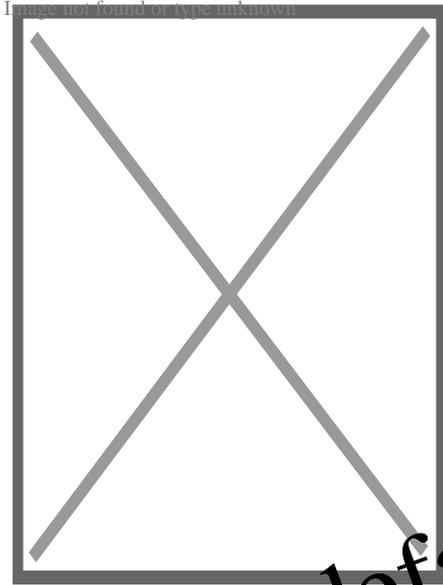
Clouds hampered most of the beginning of my sabbatical, and my only astronomy-related activity was to [visit](#) the [Sydney Observatory](#) in early October. There are some very nice telescopes on display there, including at least one that was used during [James Cook's visit to Australia](#) to record the transit of Venus in 1769. The 29-cm refracting telescope (below) is still used for public observing nights.



29-cm refracting telescope, used to observe the 1874 transit of Venus. It is the oldest working telescope in Australia (Sydney Observatory).

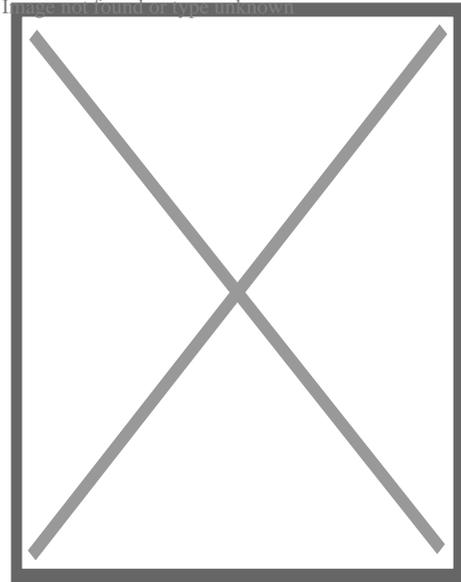
When it *is* clear, I look up. So... I have been getting a kink in my neck as I try to learn a new set of constellations. Early on in my stay, I was able to clearly identify [Crux and Centaurus](#) on my way home from the ANU each night, and I also saw [Scorpius](#), which was at the zenith down here! In Albion, it barely gets its whole shape above the southern horizon. Now, in early December, Orion, Taurus, the

Pleiades, and Canis Major are all [clearly visible](#) in Canberra – only they are UPSIDE DOWN! Yep! Orion is standing on his head. Still, the Aborigines see these stars as a man chasing the Seven Sisters (the Pleiades) in the [Kungarangkulpa stories](#).



Aboriginal shield depicting the story of the Seven Sisters, aka the Pleiades (National Museum, Canberra).

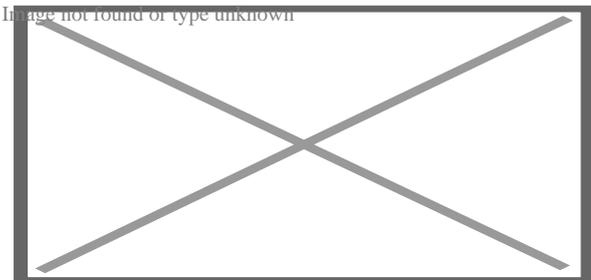
My trip to [Alice Springs](#) and [Uluru](#) gave me 1.5 clear nights and my first chance to see the Large and Small Magellenic Clouds ([LMC](#), [SMC](#)). These are irregular galaxies that are gravitationally tied to our Milky Way Galaxy and appear to be wispy clouds in the night sky – but they don't move like atmospheric clouds do. They move with the stars and rotate about the Celestial South Pole; I saw them roughly 35 degrees above the southern horizon. If my eyes could collect photons like CCD cameras do, I would see them as they are in [this picture](#). In early November, Adi, a grad student at the ANU, took Meredith and me up to [Mt. Stromlo](#) and I also saw the Clouds there, along with [47 Tuc](#), the second-brightest globular cluster in the sky. The first brightest is [Omega Centauri](#), also in the Southern Hemisphere. I also noticed [Caldwell 96](#), an open cluster of young stars in the same part of the sky as the LMC. All of these objects can be seen as faint blobs with the naked eye. There are plenty of planets out, too. Mercury and Venus have been hanging out just after sunset and Jupiter is high in the sky overnight.



Mercury (L) and Venus (R) over
Kata Tjuta (November)

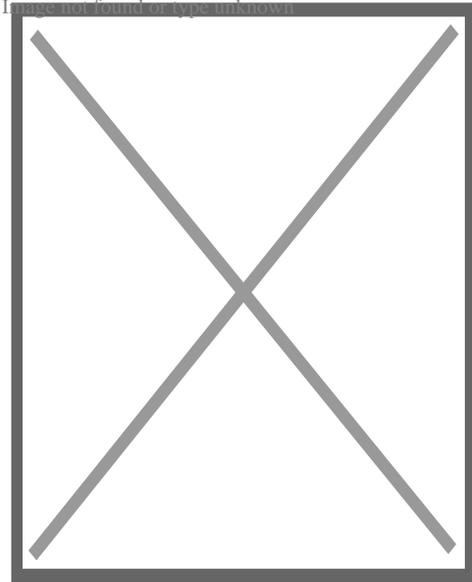
default watermark

My visits to [Mt. Stromlo](#) were fantastic! In addition to the observing night, I also went there to give a talk to students and faculty in the Research School of Astronomy and Astrophysics (RSAA). I had some time to wander around the place and saw the [remnants of domes and telescopes](#) that had been [destroyed](#) in the 2003 bushfire.



Burnt domes and melted telescopes from
the 2003 bushfire.

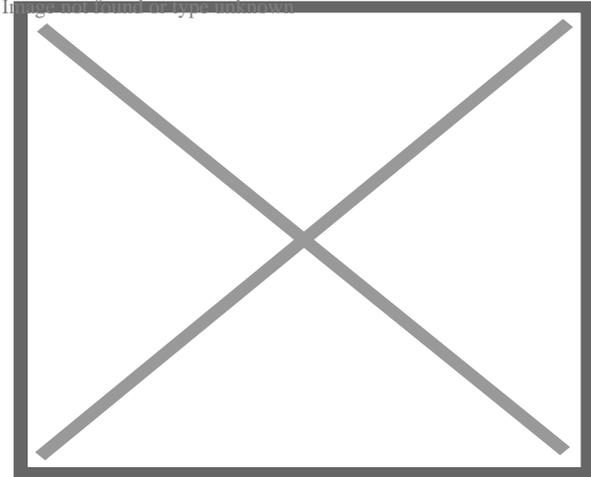
It was pretty sobering to reflect on the damage the fire did, basically destroying the entire observatory and claiming four lives (none at the observatory). Some domes and homes on the mountain survived though, when a change in the wind direction caused the fire to jump over them. Most of the buildings cannot be torn down because they are [heritage listed](#), so the reminder is constant. The astronomers at RSAA continue to do great things, though. [HAT-South](#) detects extrasolar planets, and [SkyMapper](#) at the [Siding Spring Observatory](#) is creating the first comprehensive digital survey of the entire southern sky. Of course, if you've been reading my blog regularly, you already know that [Brian Schmidt](#) won 1/3 of the 2011 Nobel Prize in Physics.



Kangaroos keeping watch over the observatories on Mt. Stromlo.

default watermark

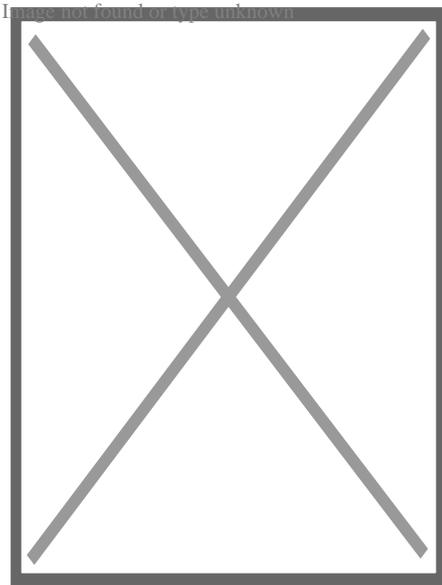
Australia has also played a major role in [NASA](#) missions, utilizing the dishes at the [Canberra Deep Space Communication Complex](#) (CDSCC) in Tidbinbilla to track deep-space spacecraft, such as [Voyager](#), one of the longest-traveling spacecraft, and [Mars Science Lab](#), which is on its way to Mars. Meredith and I spent a lovely afternoon there, enjoying gorgeous weather and great views! When we arrived, the 70-m antenna was receiving signals from [Cassini](#). Later, a radio astronomer was on duty and moved it to his objects of interest.



70-m dish (top L and R), collection of antennae at the CDSCC (bottom L), tracking schedule that includes Mars Science Lab for ~8 hours (bottom R).

default watermark

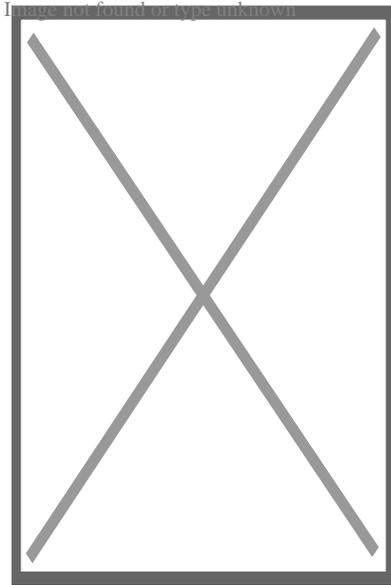
In 1969, the radio antenna at Honeysuckle Creek received the first image of Neil Armstrong setting foot on the Moon, a story that is the basis for the movie "[The Dish](#)", which I've seen twice and highly recommend! The actual dish was moved to Tidbinbilla in 1984 and [used until 2009](#).



This is the 26-m dish that was located at Honeysuckle Creek and received images of the Apollo 11 Moon landing.

Meredith and I really enjoyed our visit to this facility, and I encourage everyone who is in the Canberra area to visit it. The admission is free and the [Moon Rock Cafe](#) serves good coffee with a great view of

the 70-m dish. Those of you addicted to your cell phones, however, should be aware that the CDSCC is a radio-quiet zone...that means no phones!



Meredith turns off her phone to help the CDSCC listeners hear "whispers from space".

default watermark

Other links:

[Aboriginal Astronomy](#)

Positions of [Mercury, Venus, and Antares](#) in mid-November in the Southern Hemisphere

[More info](#) on 47Tuc

[More info](#) on the 2003 fire at Mt. Stromlo

[History](#) of the dishes at Tidbinbilla

[Video](#) of the 70-m dish moving

Thank you to [Aditya Chopra](#) and [Devika Kamath](#), two ANU graduate students, for opening up the dome and for excellent conversation! I'd also thank them for the clear skies, but I know better... ?

December 11 (Update): Read the [Uluru](#) blog for more details on the stargazing experiences in the Outback, including the [Sounds of Silence dinner](#) and observing from Imalung Lookout. I should also note that we missed the [lunar eclipse](#) on December 10 because of clouds in Cairns; it's the last total lunar eclipse in Australia until 2014.

Category

- Astronomy
- Australia

Tags

- Canberra
- CDSCC
- Mt. Stromlo
- Tidbinbilla

Date Created

December 2011

Author

nzellner

default watermark