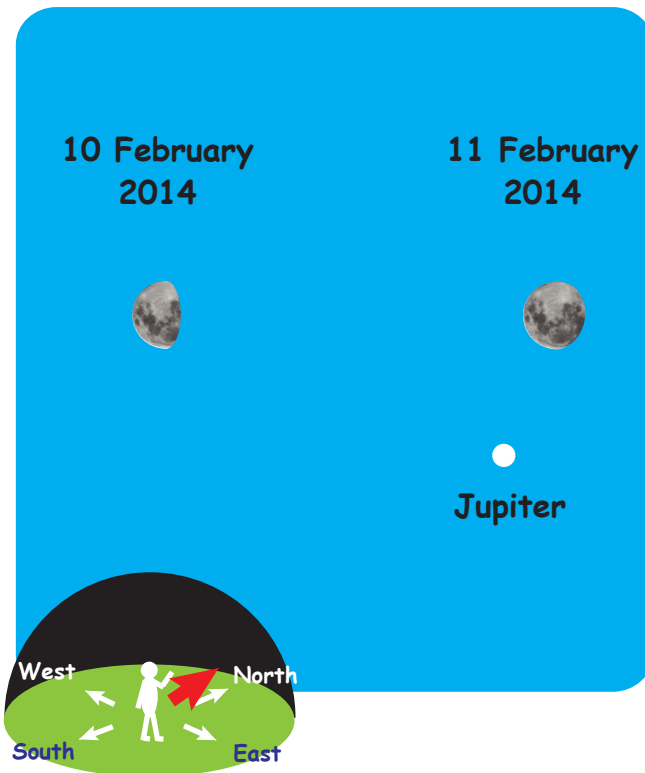


# Amazing Space!

January - March 2014

Getting started in astronomy is as easy as looking up. This newsletter shows you how to find the planet Jupiter plus the Moon and constellations without a telescope. There is also a preview of the 29 April 2014 Partial Solar Eclipse.



Left: Look above the Northern horizon as evening twilight ends to see the Moon near Jupiter on 10 and 11 February 2014.



Left: Look above the Northern horizon as evening twilight ends to see the Moon near Jupiter on 10 March 2014.



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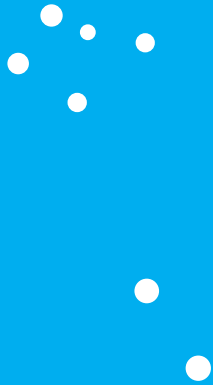
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## CruX 'The Southern Cross' and 'The Pointers'



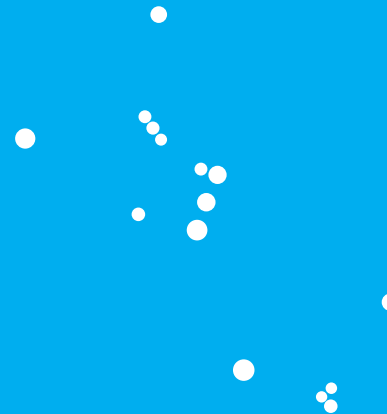
Look above the Southern horizon at the end of evening twilight (February - March).

## Constellations



Constellations are imaginary pictures in the sky. Can you imagine a giant Hunter or a Cross in the night sky?

## Orion 'The Hunter'



Look above the North Western horizon at the end of evening twilight (January - March).

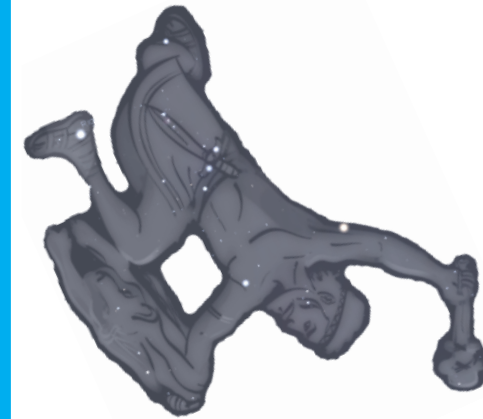


Image credits

Full Moon disc: NASA.gov  
Southern Cross and Orion: Stellarium (Stellarium.org)



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## Find the Moon

January - March  
2014



### Crescent Moon

January 5  
February 4  
March 5



### First Quarter Moon

January 8  
February 7  
March 8



### Gibbous Moon

January 11  
February 10  
March 11



### Full Moon

January 16  
February 15  
March 17

West

North

East

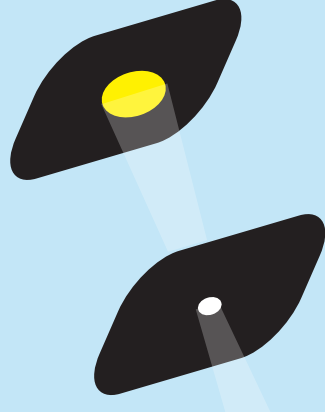


# Solar Eclipse Pinhole Viewer

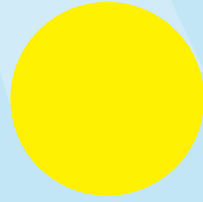
## Solar Eclipse 29 April 2014

### Instructions

1. Cut the viewer in half (on the dashed line).
2. Make a pinhole at the location marked.
3. Position the pinhole so the Sun's image falls onto the blank side of the second page as shown (at right).
4. Look only at the projected image of the Sun. Do not look at the Sun through the hole.
5. The larger the gap between the two pieces of paper, the bigger the Sun's image will be.



→ Make pinhole here



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### Safety Warning!

Looking directly at the Sun without using solar filters designed to filter 100% of the Sun's ultraviolet radiation may result in permanent blindness.

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## 29 April 2014 Partial Solar Eclipse



**Note:** Eclipse times listed for local time zones. Event times thanks to Google Maps. UT times here: <http://eclipse.gsfc.nasa.gov/OH/OHtables/OH2013-Tab02.pdf>

\* = Maximum eclipse occurs at sunset.

### Australian Curriculum links for school teachers

Arranging for your students to indirectly observe this eclipse provides the student with a real life example of ... how the relative positions of the Earth, sun and moon affect phenomena on Earth' (Year 7 Achievement Strand Australian Curriculum (Science) Earth and space sciences content strand reference ACSSU115).

#### Banora Point / Tweed Heads

Eclipse begins: 4:29:34 pm  
Mid-Eclipse: 5:15:23 pm\*  
Sunset: 5:15:23 pm

#### Brisbane

Eclipse begins: 4:31:00 pm  
Mid-Eclipse: 5:18:23 pm\*  
Sunset: 5:18:23 pm

#### Cairns

Eclipse begins: 4:56:12 pm  
Mid-Eclipse: 5:31:20 pm  
Sunset: 5:59:56 pm

#### Canberra

Eclipse begins: 4:08:17 pm  
Mid-Eclipse: 5:12:25 pm  
Eclipse ends: 5:23:06 pm

#### Gold Coast

Eclipse begins: 4:29:54 pm  
Mid-Eclipse: 5:16:00 pm\*  
Sunset: 5:16:00 pm

#### Melbourne

Eclipse begins: 3:57:59 pm  
Mid-Eclipse: 5:06:53 pm  
Sunset: 5:16:54 pm

#### Perth

Eclipse begins: 1:16:39 pm  
Mid-Eclipse: 2:42:10 pm  
Eclipse ends: 3:59:10 pm

#### Rockhampton

Eclipse begins: 4:39:43 pm  
Mid-Eclipse: 5:26:56 pm  
Sunset: 5:33:33 pm

#### Sydney

Eclipse begins: 4:13:39 pm  
Mid-Eclipse: 5:15:02 pm  
Sunset: 5:16:54 pm

#### Townsville

Eclipse begins: 4:48:35 pm  
Mid-Eclipse: 5:29:44 pm  
Eclipse ends: 5:53:11 pm

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