

# SPACEWATCH

the newsletter of the Abingdon Astronomical Society

11<sup>th</sup> April 2005

Dr Andrew Benson –  
Oxford University

## “The Long and the Short of it: What Determines the Size of Galaxies?”

Well in between the April (snow?) showers are you able to get a glimpse of the sky at all? With the nights getting shorter as summer (wot?) approaches, make the most of these Spring evenings to do your star gazing. You still need to wrap up warm though.

If you don't like to stay up late and only have a small scope or binoculars, why not watch the Moon grow this week from a thin crescent to a half moon? This is the best phase to observe the shadows caused by craters and mountains, and to watch how they change from night to night. Note that the Moon sets about 50 minutes later every day.

## THE NIGHT SKY THIS MONTH

by Bob Dryden

### The Planets:

**Saturn** is riding high now as it goes dark, still in the constellation of Gemini, and still just below Castor and Pollux. This is the ideal period to turn your telescope on the planet as it will never get much higher in the sky than it is at the moment. The rings are wide open at about -23.5 degrees so any small telescope will show them.

While Saturn is bright and spectacular, **Jupiter** is even brighter at mag. -2.4 (Saturn is mag. +0.2) and just as good to look at. In fact, more actually happens (from an observational point of view) on Jupiter. With a telescope you can detect the planet's rotation in just an hour or so, and watch features change in the cloud belts visible on the disc. Plus, there is the continual dance of the four bright satellites as they rotate around the planet. You can spend a whole night's observing just watching Jupiter. The planet is in Virgo, and is the bright 'star' low in the east as it goes dark - it is difficult to miss.

The other planets are generally too close to the Sun or too close to the horizon to be seen this period. There is one challenge for you however. **Venus** has been out of sight for a few months now but it is about to appear in the evening sky. The challenge is to see how soon you can find it. It may be possible to see the planet by the beginning of May but it could be difficult. While Venus is a very bright -3.8, it will be very low, just north of west.

Scan the horizon with binoculars just after sunset to see if you can spot it. On May 9th, a very thin crescent Moon will be just above Venus giving you a marker, but the observation will still be difficult.

### Meteors, Asteroids, Comets, etc.:

**Meteors:** Technically, there is the Lyrid shower to watch in April. I say technically because there is a full Moon during the active period of April 19th to 25th so it will be difficult to see many Lyrids this year. Maximum night is April 22nd if you fancy trying anyway.

**Asteroids:** 1 Ceres is continuing to brighten and it goes from mag. 7.5 to mag. 7.0 as it cruises through Libra. Binoculars will show this 'star' moving day by day if you watch carefully. This is the best Ceres will get this apparition so have a look soon. What about a series of images you could show us, or some sketch charts showing the asteroid's movement you could put in Spacewatch?

**Occultation:** There is a nice occultation of a mag. 6.6 star in Leo at 20.44 UT on 20th April. The star will disappear behind the dark part of the Moon's limb so the event should be quite easily visible in a small telescope.

**Comets:** Comet C/2004 Q2 Machholz continues to be on view although it is fading slowly. It goes from mag. 8 to mag. 9 this period so you will probably need either big binoculars or a small telescope to find it now. However, the comet is riding high as it crosses from Draco into Ursa Major and actually crosses part of the Plough by the beginning of May so it is ideally placed for viewing. A second comet, while not so bright, is starting to get our attention in more ways than one. Comet 9P/Tempel is in Virgo and brightens from mag. 10.7 to mag. 9.8. Obviously, you will need a telescope to find it at the moment but that may not be the case later in the year. This comet is the target of the Deep Impact Mission and later this summer the Americans are going to crash (yes, 'crash', they don't understand subtlety) a probe into it to see what happens. No one actually knows what the result will be. The probe might just disappear into the comet like a stone into a snow bank, but it might also smash the comet into pieces. If the comet does disintegrate, it would be likely that its brightness would increase dramatically. Estimates range from faint up to mag. 2 which would make it a naked eye object. We will just have to watch on the night.

## MOON PHASES:

Last Qtr: 2<sup>nd</sup> Apr.; New: 8<sup>th</sup> Apr.; First Qtr: 16<sup>th</sup> Apr.;  
Full: 24<sup>th</sup> Apr.; Last Qtr: 1<sup>st</sup> May, New: 8<sup>th</sup> May.

## THIS MONTH'S DEEP SKY OBJECT

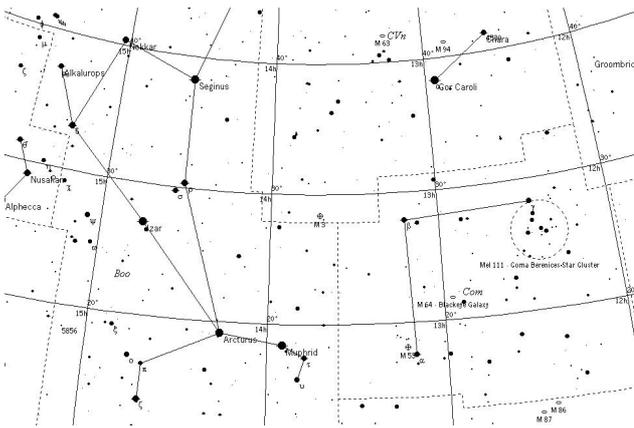
### M3

by Paul Warren

Spring heralds the arrival of the globular clusters (assuming that the clouds will cooperate, which they haven't been doing recently). One of the best examples of these in the Northern Hemisphere is M3 (i.e. the third entry logged by Charles Messier in his famous catalogue).

To find M3, draw an imaginary line between Arcturus and Cor Caroli. M3 is roughly halfway along this line. There aren't any bright stars nearby, but it should show up as a faint smudge in a finderscope on a dark night.

An alternative way of finding M3 for a polar aligned telescope is to locate Comae, move the scope about 1 degree north, and then sweep East (i.e. to the left of Comae). Using your lowest powered eyepiece, you should be able to pick up M3 as you sweep across the sky.



If you're still not too sure how to find it, try using a pair of binoculars first, to acquaint yourself with this area of the sky. The cluster should be visible in binoculars, especially if you hold them nice and steady.

Through a 3 or 4-inch telescope, only the edge of the cluster will resolve into individual stars. However, as the aperture size increases, so the view become better and better, resolving stars closer and closer to the core of the cluster.

Globular clusters are believed to be incredibly ancient, maybe even as old as the Milky Way galaxy itself. They orbit around the galaxy in the galactic halo.

M3 is believed to be 40,000 light years away from us, and the cluster's diameter exceeds 200 light years.



## THE SOUTHERN SKIES

by AAS member Deborah Hambly in New Zealand

This Saturday I travelled to the East Coast to observe the partial phase of the hybrid solar eclipse. The head of the Northland Astronomical Society opened his house for this purpose and five of us set up with our equipment on his deck for the event. The eclipse started at sunrise at 6:30am local time with cloud cover inconveniently located on the Eastern horizon.



As the hour long period of eclipse elapsed the clouds rose tantalisingly slowly (nearly at the same speed as the Sun). Our patience was finally rewarded for the last 20 minutes of the eclipse. The anticipation of the clearing clouds, the detail on the surface of the sun from the remaining haze and a double sun spot visible at the end made this eclipse quite spectacular.

[Ed: The eclipse, over the Pacific Ocean, started as annular south of New Zealand, became total in the middle, just north of Pitcairn Island) and then was annular again at the end (in Central America). None of the total phase of the eclipse was visible from major land masses.]



*The clouds finally cleared to allow the eclipse and sunspots to be seen. Photo: courtesy of Northland Astronomical Society, New Zealand.*



## ASIAN TSUNAMI SEEN FROM SPACE

by Patrick L. Barry

When JPL research scientist Michael Garay first heard the news that a tsunami had struck southern Asia, he felt the same shock and sadness over the tremendous loss of human life that most people certainly felt. Later, though, he began to wonder: were these waves big enough to see from space?

So he decided to check. At JPL, Garay analyzes data from MISR—the Multi-angle Imaging SpectroRadiometer instrument aboard NASA's Terra satellite. He scoured MISR images from the day of the tsunami, looking for signs of the waves near the coasts of India, Sri Lanka, Indonesia, and Thailand.

Looking at an image of the southern tip of Sri Lanka taken by one of MISR's angled cameras, he spotted the distinct shape of waves made visible by the glint of reflected sunlight. They look a bit like normal waves, except for their scale: These waves were more than a kilometer wide!

Most satellites have cameras that point straight down. From that angle, waves are hard to see. But MISR is unique in having nine cameras, each viewing Earth at a different angle. "We could see the waves because MISR's forward-looking camera caught the reflected sunlight just right," Garay explains.

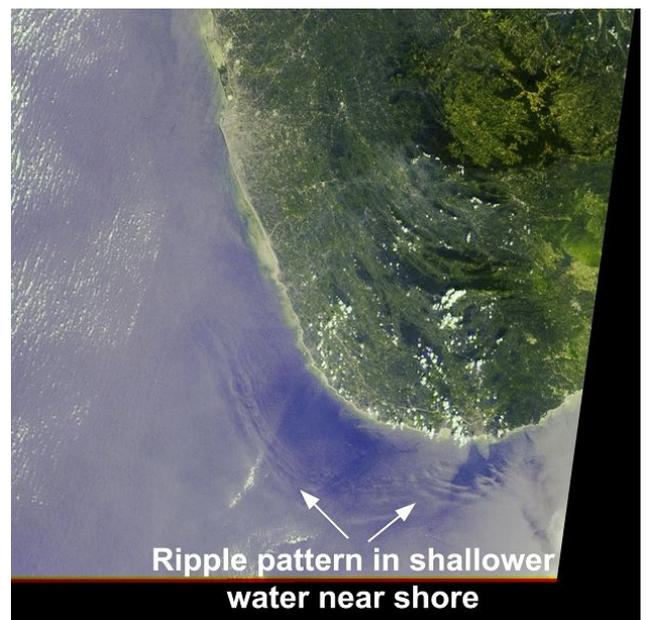
In another set of images, MISR's cameras caught the white foam of tsunami waves breaking off the coast of India. By looking at various angles as the Terra satellite passed over the area, MISR's cameras snapped seven shots of the breaking waves, each about a minute apart. This gave scientists a unique time-lapse view of the

motion of the waves, providing valuable data such as the location, speed, and direction of the breaking waves.

Realizing the importance of the find, Garay contacted Vasily Titov at the National Oceanic and Atmospheric Administration's Pacific Marine Environmental Laboratory in Seattle, Washington. Titov is a tsunami expert who had made a computer simulation of the Asian tsunami.

"Because the Indian Ocean doesn't have a tsunami warning system, hardly any scientific measurements of the tsunami's propagation exist, making it hard for Dr. Titov to check his simulations against reality," Garay explains. "Our images provide some important data points to help make his simulations more accurate. By predicting where a tsunami will hit hardest, those simulations may someday help authorities issue more effective warnings next time a tsunami strikes."

Find out more about MISR and see the latest images at [www-misr.jpl.nasa.gov/](http://www-misr.jpl.nasa.gov/). Kids can read their own version of the MISR tsunami story at: [spaceplace.nasa.gov/en/kids/misr\\_tsunami](http://spaceplace.nasa.gov/en/kids/misr_tsunami).



*This December 26, 2004, MISR image of the southern tip of Sri Lanka was taken several hours after the first tsunami wave hit the island. It was taken with MISR's 46° forward-looking camera.*

*This article was provided by the Jet Propulsion Laboratory, California Institute of Technology, under a contract with the National Aeronautics and Space Administration.*

## FURTHER DISCUSSION

The society's e-mailing list is used by members to comment on all things astronomical, as well as other related and not-so-related subjects. The list is also used to

publicise “first-clear-night” observing evenings and for alerting members to hot observing news.

To view the messages on the web go to:  
<http://www.smartgroups.com/groups/abastro> .

To subscribe to the list either go to this web page and click on “Join the Group” or send an email to [abastro-subscribe@smartgroups.com](mailto:abastro-subscribe@smartgroups.com) . You will then receive all e-mails sent to the list. To post e-mails on the list: send an email to [abastro@smartgroups.com](mailto:abastro@smartgroups.com) . To unsubscribe: send an email to [abastro-unsubscribe@smartgroups.com](mailto:abastro-unsubscribe@smartgroups.com)

Don't forget the Society's web site:  
[www.abingdonastro.org.uk](http://www.abingdonastro.org.uk)

Our new webmaster, Andrew Ramsey [Ed – that's me!] is always on the look-out for members' photographs to put on there. Don't forget you can read back copies of SpaceWatch on the web site too.

## DATES FOR YOUR DIARY

**18<sup>th</sup> Apr:** 8pm. Beginners' Meeting in the Perry Room.

**9<sup>th</sup> May:** 8pm. Annual General Meeting followed by a quiz.

There are no more observing evenings this season.

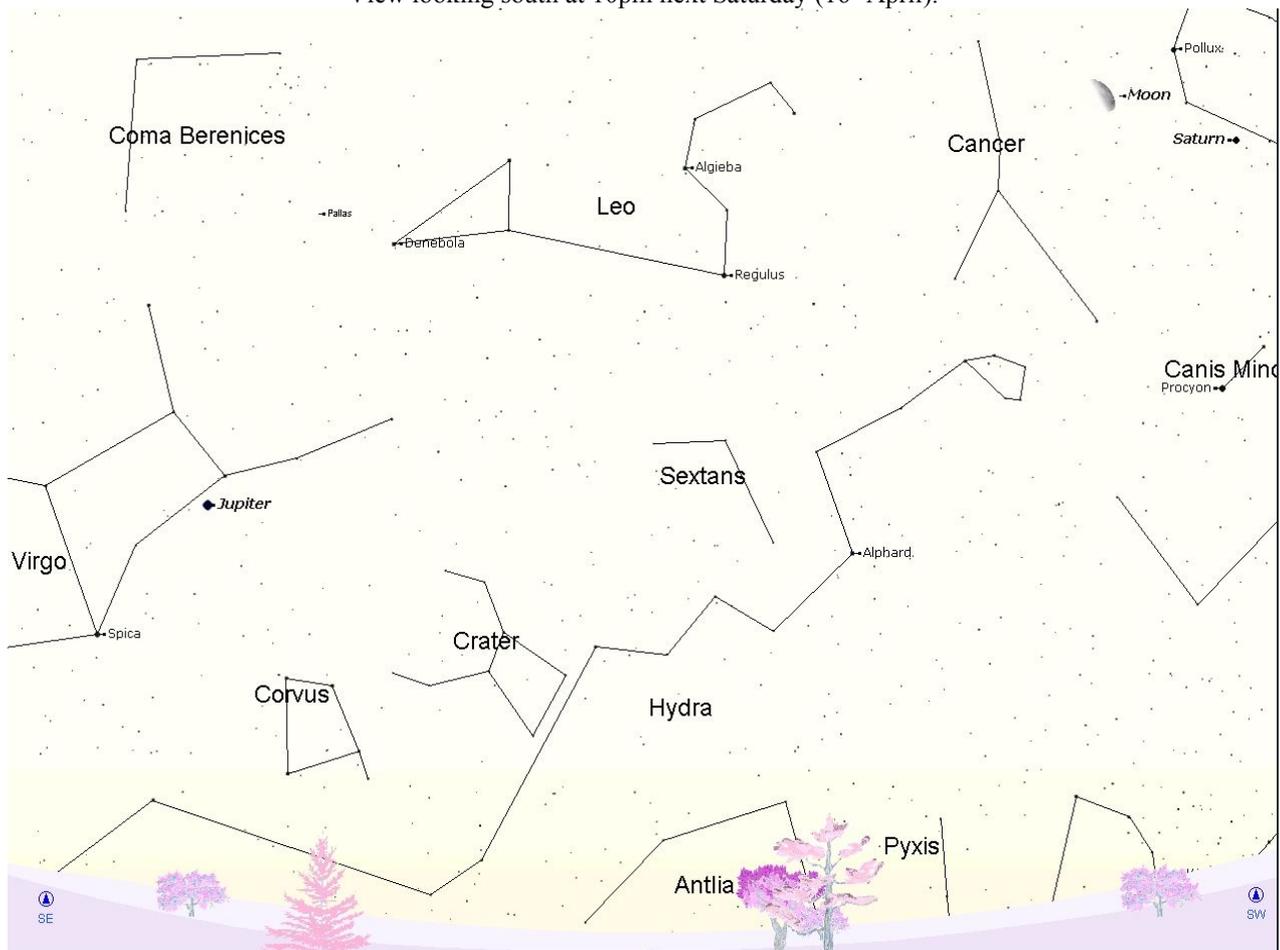
The editor of “SpaceWatch” is Andrew Ramsey, who would very much appreciate your help and contributions. Please send any news, articles, observations, photos... to:

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## STAR CHART

View looking south at 10pm next Saturday (16<sup>th</sup> April).



Jupiter shines in the south-east in Virgo. Saturn is near Castor and Pollux in Gemini. The Moon is nearby, at first quarter in Cancer.