



COFFS HARBOUR ASTRONOMICAL SOCIETY INCORPORATED

MINUTES OF JULY 2012 MONTHLY MEETING HELD AT BOAMBEE HALL, MONDAY 2 JULY 2012 AT 7:00pm.

PRESENT: 10 members and 6 visitors.

MEETING OPENED: 7:02pm with President, Win Howard in the chair.

APOLOGIES: Peter Black

MINUTES OF LAST MEETING: adopted as circulated by e-mail.

BUSINESS ARISING FROM MINUTES: nil

CORRESPONDENCE:

IN:

1. From "Humans in Space Art" re: a worldwide art competition for 10-18 year olds. Information can be found at their website <http://www.lpi.usra.edu/humansinspaceart/> .
2. From Cambridge University Press including a catalogue of astronomy related books. Title of the catalogue is "Astronomy 2012 Latest Releases and Bestsellers".

OUT: Nil

GENERAL BUSINESS:

The next monthly meeting will also be the Annual General Meeting at which all positions will be declared vacant, elections for all positions will be held and financial and other reports will be presented.

REPORTS FROM MEMBERS:

- 1) From Frank Kennedy: there is a show on ABC radio national called Hindsight. This often contains astronomical content. There was a very good segment on the 5 June 2012 show in particular. These can be accessed from the internet.

- 2) From Win Howard:
 - a) A report on the Transit of Venus. His appearance with his telescope at Coff's Harbour was well attended and excellent viewing was had in the spaces between the clouds.
 - b) Anyone getting up early and looking at the sky before dawn will see a nice line of 4 objects in the next weeks. The 4 objects in a nice line will be:
 - i) Aldebaran, the giant red star in Taurus on the face of the bull.
 - ii) Venus.
 - iii) Jupiter.
 - iv) The Pleiades, which is the cluster in Taurus often known as the Seven Sisters.
 - c) As a bonus for getting up early there should be an excellent view of the clouds of Magellan in the south.
- 3) From Roberto Cornale: Went to Sydney Observatory and participated in one of their night tours. Roberto was only moderately impressed.
- 4) From Terry Gill: by pure chance Terry checked the Yahoo site just before coming to the meeting and one of the leading news items was the belief that the elusive Higgs Boson particle may have been found. There had been no announcement to that effect but there was going to be a big gathering near the Large Hadron Collider in two days time and Peter Higgs had been invited to attend. This sparked the idea that the particle may have been found. *(On Wednesday 4 July, 2 days after our meeting, the announcement was made that a particle very similar to the Higgs boson had indeed been found. Interested readers can read more about it and its implications for physics and astronomy at <http://www.telegraph.co.uk/science/science-news/9409915/Peter-Higgs-I-never-doubted-bosons-existence.html>)*

REPORTS FROM THE PRESIDENT: (this material is collected from the internet each month and presented in an edited form).

1. Rob McNaught recently discovered a 500m-1km diameter asteroid only four days before it passed earth at a distance of about 14 lunar distances. The asteroid was named 2012 LZ1. It was unknown and uncatalogued before its discovery, suggesting that maybe more time and money should be put into looking for these near-earth asteroids.
2. A report to the UN this month suggests that there is a need for more education regarding the threats and responses needed regarding possible asteroid impacts. The report suggests that our major concern should be with smaller asteroids that could destroy a city, rather than a larger asteroid that could cause more damage. These smaller ones are much more likely to escape detection. More information and detail at <http://www.abc.net.au/science/articles/2012/06/07/3519675.htm> .
3. The European Southern Observatory has announced that the E-ELT (European Extremely Large Telescope) will be built, hoping to be operating by 2022. This is planned to be an optical, reflecting telescope with a primary mirror of 129 feet or 39.3m. Again this is planned for the Chilean Andes mountains. More info at its own website <http://www.eso.org/public/teles-instr/e-elt.html> .
4. ALMA, the Atacama Large Millimeter/submillimeter Array, radio telescope is very near its 2013 completion date. Over half of its dishes are operating and have

- already been linked to study parts of the sky. The frequencies that ALMA is tuned for are at the border between radio and infrared. This frequency band is not well covered by other scopes. ALMA also has its own website <http://www.almaobservatory.org/>.
5. Two new moons have been discovered orbiting Jupiter, bringing the total known moons to 67. They are very tiny, being only 2 and 3 km in diameter. They were discovered in September 2010 but follow-up observations were needed to confirm their orbits, thereby confirming that they are moons and not passing asteroids. They are called S/2010 J 1 and S/2010 J 2, not very exciting names.
 6. Titan is the largest moon of Saturn. Cassini space probe has provided data that indicates there is a hidden ocean of liquid water under its shell. This is very interesting, not only because of the obvious link between water and life, but also because it could help explain how methane gas is replenished at the surface of the planet. Details at http://science.nasa.gov/science-news/science-at-nasa/2012/28jun_titanoocean/.
 7. The European Space Agency (ESA) has approved the construction of another telescope that will be called Euclid. It will be a space-based scope with the main purpose of investigating dark matter and dark energy. Launch is planned for 2020. Details at [http://en.wikipedia.org/wiki/Euclid_\(spacecraft\)](http://en.wikipedia.org/wiki/Euclid_(spacecraft)).
 8. At 10am on Sunday 1 July another leap-second was added to our time measurement. Leap-seconds are added at irregular intervals as required to correct for the varying rotation of the earth. This is detected by atomic clocks and is corrected as needed. The last leap-second was added in 2008 and, on average, one is added about every 18 months. Considerable detail on leap-seconds can be found at http://en.wikipedia.org/wiki/Leap_second.
 9. The Hubble telescope is still finding new and wonderful things. It recently discovered an arc of bright light near a distant galaxy. Not sure what it is yet. Read more at <http://hubblesite.org/newscenter/archive/releases/2012/19/full/>.
 10. NASA's Kepler space telescope has discovered a very strange pair of planets orbiting a star in the constellation of Cygnus. One planet is very dense, rocky and about 1.5 times the size of earth. The other is about 4 times the size of earth and is similar to Neptune in that it is mainly hydrogen and helium and may have a rocky core. This gas giant planet has a very low density, even lower than water. The very unusual feature of these two planets is that they orbit the star at distances of 18 and 19 million kilometres from the star. At their closest approach to each other they would be only 1.9 million km apart. These are the closest planets ever found, yet they appear similar to two of our planets that are very far apart. Details at <http://en.wikipedia.org/wiki/Kepler-36>.

CLOSURE AND FUTURE MEETING TIMES:

The next monthly meeting will be Monday 6 August 2012. This will be the AGM and will again be at Boambee Hall at 7:00pm, all members and interested persons are encouraged to attend.

Meeting closed at 8:16pm.

VIEWING

The sky was 100% cloud free. However we were only two days short of the full moon and the light from the moon drowned out any feint objects.

Win took this opportunity to demonstrate the use of the Ultra High Contrast (UHC) filter to reduce the effect of light pollution. This was used to enhance views of some brighter nebulae, especially eta carina.

As could be reasonably expected in July the night was quite chilly. Members are reminded to bring adequate warm clothing for the next few meetings.

Some of the other objects viewed were alpha centauri and a number of naked-eye asterisms and constellations. The famous “coathanger” asterism was revisited by some, and enjoyed for the first time by one of our visitors who has a very nice scope and significant astronomical experience, but had never observed this impressive grouping before.

A few of the members have formed a group who test each other at these viewing sessions. They will point at a star and ask what it is, or they will ask each other where something is in the sky. Great to see this enthusiasm.

Terry GILL
Secretary

PS On return home from the meeting Terry found a letter from Peter Black in his mailbox. This was a significant letter with a sizeable donation to the Society, as well as Peter's annual membership subscription. There was also the good news that Peter may be well enough to come along to the AGM. Details of this letter will appear in the correspondence section of the next meeting.