

# Annual report 2015- ASSA Shallow Sky Observing Section

by Dave Blane

## Sun

Chris Vermeulen was the most active Shallow Sky contributor having submitted excellent solar images and sunspot analysis in regular monthly reports.

The spectacular naked-eye sunspot AR2192 was well observed with images and received from many observers including Chris Vermeulen, Richard Ford and Kos Coronaios.

Chris Vermeulen has agreed accept the position of specialist/consultant in solar observing sub-section. His knowledge and experience will certainly be of great value to us in this area.

## Moon

The Moon was a favourite target for our observers with numerous images of the Moon at all phases as well as conjunctions with bright stars and planets having been received.. Richard Ford was particularly prolific with his excellent images.

The International Observe the Moon Night initiative was well supported with reports received from Louis Trichardt, Henley-on-Klip, Johannesburg Observatory and the Orion Observation Group in Paarl.

## Comets

The "Christmas Comet", Comet 2014 Q2 Lovejoy was well observed by several Shallow Sky observers. Kos Coronaios submitted a number of images of the comet from November to February and described the development of the tail as well as tail disruption events.

Comet Siding Spring's encounter with Mars was also well observed with numerous images of the encounter having been submitted.

Observations and images of Comet C/2013 V5 (Oukaimeden) were also submitted by Kos Coronaios.

## Meteors

A number of fireball reports have been received, with some of them more convincing than others. Several reports of "falling objects" and bright meteors were received which generated considerable discussion. Thanks to Tim Cooper, Brian Fraser and Allen Versfeld, among others, who helped in analysing the data and providing feed back to the people reporting the sightings.

Auke Slotegraaf, Hans and Evan spent three evenings with the Helderberg Eco Rangers observing and imaging the Geminid meteor shower. A comprehensive report was submitted which included a total of 53 Geminids and 23 sporadic meteors were counted. Thanks to Tim Cooper for his analysis and comments on these observations.

## Asteroids

Regular workshops and training sessions for the International Asteroid Search Collaboration (IASC) were arranged and presented by Jerome Jooste with several schools being involved. At least two new asteroids have been discovered to date!

The IASC is an online educational outreach program for high schools and colleges, in which students make original asteroid discoveries. Each day students receive telescopic images, only hours old and taken along the ecliptic. Using the software Astrometrica, they accurately measure the time and position of asteroids moving in the background. The measurements are recorded in a report sent to the Minor Planet Centre (Harvard).

The ASSA NEO-Watch programme has been set up in collaboration with NASA. NASA has embarked on the Asteroid Grand Challenge, a program to “find all asteroid threats to human populations and know what to do about them”. The Asteroid Grand Challenge involves detecting all near earth objects (NEOs) larger than 100 metres, characterise them and determine a way to mitigate them. But while dedicated search programs do a great job of finding these objects, follow up observations are required to characterise them and more precisely define their orbits. This pastime is well suited to dedicated amateur astronomers.

## **Occultations**

The occultation of theta Librae by the Moon was observed with timing submitted by Kos Coroaios, Oleg Toumilovitch and Neville Young.

Thanks to Brian Fraser for providing alerts for minor planet occultations and for providing advice on observing these as well as Lunar occultations.

## **Satellites**

Thanks to Greg for his input in handling queries on sightings of satellites and “UFO’s” as well as the many interesting articles he posted on Facebook.

While many images of Shallow Sky objects have been submitted over the past year these are reported to the Imaging Section unless there is some analytical or observational component in the submission.

## **Awards**

I would like to nominate Chris Vermeulen for a **Director’s Award** for his Solar observations. His monthly reports comprehensive and detailed analysis of Solar sunspot activity, including excellent images and graphs of sunspot groups and numbers. He has also analysed the variation of Mean Daily Frequency over a period of time and goes on to predict future activity.

Chris has also produced a comprehensive “*Amateur’s Guide to Sunspot Observation*” which he has made freely available. He is also mentoring other observers who have expressed interest in observing sunspots.