



The Binocular Sky

November
2012

Newsletter

Introduction

Welcome to the November 2012 *Binocular Sky* Newsletter . The intention of this monthly offering is to highlight some of the binocular targets for the coming month. It is primarily targeted at observers in the UK, but should have some usefulness for observers anywhere north of Latitude 30°N. For this Newsletter to be a useful tool, it needs to have the information that **YOU** want in it; therefore please do not be shy about making requests – if I can accommodate your wishes, I shall do so. There is a printer-friendly version: <http://binocularsky.com/newsletter/201209p.pdf>

The Deep Sky (Yellow text is hyperlinked to charts and more information.)

As the sky darkens at twilight, in the North are [NGC 457 \(the Owl Cluster\)](#) and [NGC 633](#) in Cassiopeia and the [Perseus Double Cluster](#). To the East of them lie [M34](#) in Perseus and the often-overlooked [NGC 752](#) in Andromeda. Rising in the north-east is the trio of Auriga clusters, [M36](#), [M37](#) and [M38](#). And, later, and [M35](#) in Gemini. While you are looking at M35, also see if you can identify two smaller open clusters, [NGC 2158](#), which is half a degree to the SE, and the slightly more difficult [IC 2157](#), which is a degree to the ESE. To the south of them, the [Pleiades](#) and [Hyades](#) are getting higher in the evening skies. Also look out for the nearby [NGC1647](#).

The Deep Sky (contd)

Open (also called 'Galactic') Clusters are loosely packed groups of stars that are gravitationally bound together; they may contain from a few dozen to a few thousand stars which recently formed in the galactic disk.

In November, the Milky Way is overhead in the mid-to-late evening. This means that those objects (globular clusters and galaxies) that are outside our galaxy are not as well placed for observation as they are when the Milky Way is low in the sky. Although the bright **M81** (*Bode's Nebula*) and **M82** (*The Cigar Galaxy*), are still relatively easy to observe, even in a 50mm binocular, their altitude is such that you are unlikely to get neck-strain when you do so with straight-through binoculars. M81 and M82 can be used as a good demonstration of averted vision: if you have them both in the same field of view, you may see that the core of M81 becomes more apparent if you look at M82. **M51** (*The Whirlpool*) and **M101** are becoming much more difficult owing to their lower altitudes; if you wish to see them this month, you should look as soon as the sky is dark.

Two notable exceptions to the generalisation of galaxies being poorly placed on November evenings are The **Great Andromeda Galaxy, M31** and **M33** (*The Pinwheel*), both of which are close to the plane of the Milky Way. **M31** in particular is very easily visible this month and is a naked eye object in moderately dark skies. It is large and bright enough to be able to withstand quite a lot of light pollution (making it available to urban observers). **M33** has a low surface-brightness and benefits from lower magnification. This generally makes it easier to see in, say, a 10x50 binocular than in many "starter" telescopes.

The Deep Sky (contd)

It is in November evenings that the **Sculptor Galaxy, NGC 253**, becomes observable before midnight.

Galaxies are gravitationally bound “island universes” of hundreds of billions of stars at enormous distances. The light that we see from M31, for example, left that galaxy around the time our ancestors of the genus *Homo* were just evolving!

Although the two Hercules globulars, **M92** and the very impressive, and very easy to find, **M13** are still observable, but their altitude becomes less favourable as the month progresses. **M15** and **M2** are both better placed. This is also the best time of year to observe **NGC 288** in the evening.

Globular clusters are tightly-bound, and hence approximately spherical, clusters of tens, or even hundreds, of thousands of stars that orbit in a halo around almost all large galaxies that have been observed. They are important for two reasons: Firstly, they contain some of the oldest stars in the galaxy, so studying them helps us understand the evolution of stars. Secondly, they are useful as “standard candles” in establishing a distance scale of the Universe, based on the assumption that the brightest stars in any globular cluster will be approximately the same brightness and that the brightest globulars in a galaxy will be approximately the same brightness.

The Deep Sky (contd)

The easiest planetary nebula, **M27 (the Dumbell Nebula** – although I insist that it looks more like an apple core than a dumbell!) – is visible in the evening skies in even 30mm binoculars. The **Helix Nebula, NGC 7393** is becoming less easy to observe, and is another object that you need to attempt as early as possible in the evening.

Planetary Nebulae are short-lived (generally a few tens of thousands of years) masses of gas and plasma that result from the death of some stars. They have nothing to do with planets, but get their name from the fact that, in early telescopes, they had the disc-like appearance of planets.

For interactive maps of Deep Sky Objects visible from 51°N, please visit:

http://binocularsky.com/map_select.php

The Solar System

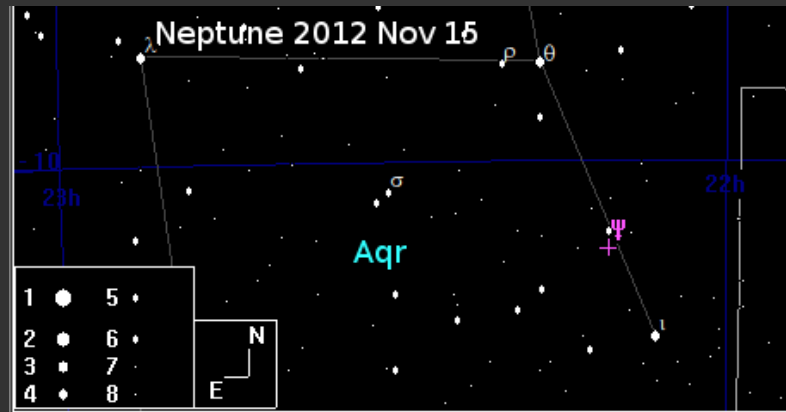
Meteor Showers

The major meteor shower this month is the Leonids, which peaks during daylight, although there is a suggestion that there may be a second peak at around 21:00 (see <http://www.imo.net/calendar/2012#leo>), by which time the Moon will have set. You can use binoculars to examine the persistence of any ionisation trails.

The Solar System (contd)

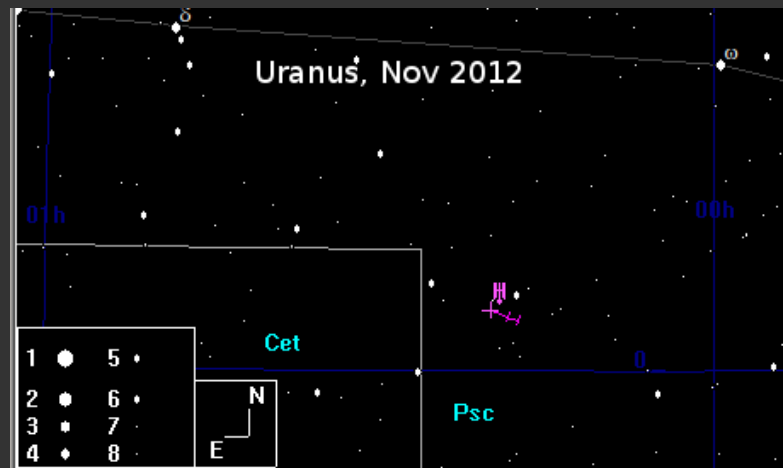
Planets

Of the two binocular planets, **Neptune** transits soon after the end of twilight by mid-month, so make it one of your first targets for an evening's observing. It is close to the 5th magnitude **38 Aqr**, which is



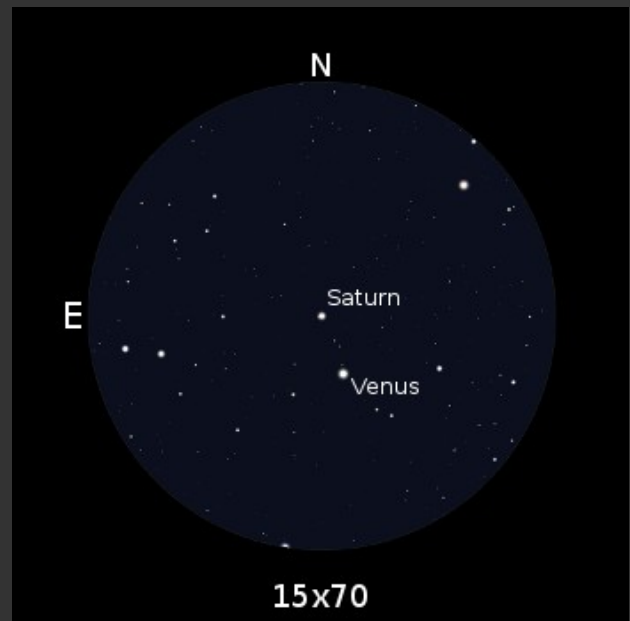
approximately at the south-western apex of an equilateral triangle that has σ and θ **Aqr** as its other apexes.

Uranus transits about two hours later, on the boundary of Cetus and Pisces. It is considerably brighter than Neptune and transits at about 10 degrees higher altitude, making it much easier to observe, even in very small binoculars.



The Solar System (contd)

There is a conjunction of **Saturn** and **Venus** just after 01:00 UT on the 27th. They will be separated by only about half a degree and, if you have binoculars with a magnification of about 15x or more, you may be able to see the different sizes and shapes of the planets (Venus is slightly gibbous). Venus will be more than 50 times as bright as Saturn!



The Moon

Nov 07 Last Quarter
Nov 13 New Moon
Nov 20 First Quarter
Nov 28 Full Moon

Wishing you Clear Dark Skies,

Steve Tonkin for ***The Binocular Sky***

Acknowledgments:

The charts in this newsletter were prepared with Guide v9.0 from <http://projectpluto.com>

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