



The Binocular Sky

September
2012

Newsletter

Introduction

Welcome to the September 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. More open Clusters are visible in the southern sky in the region of Ophiuchus. These include [Melotte 186](#), [NGC 6633](#) and [M11, The Wild Duck Cluster](#), all of which are easily visible in 50mm binoculars. Even further to the south-west is a group of open clusters in Serpens and Sagittarius that includes [M16 \(the Eagle Nebula\)](#), [M17 \(the Swan or Omega Nebula\)](#), [M23](#), [M24 \(the Sagittarius Star Cloud\)](#), and [M25](#). Also worth enjoying in this region of sky is the denser part of the Milky Way that forms the *Scutum Star Cloud* as a backdrop to this cluster.

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.

While you are in this region of sky, see if you can find **Barnard's Star** in Ophiuchus. This has the largest known proper motion of any star. (*Proper motion* is motion with respect to the celestial sphere.) Although it is visible in 50mm binoculars from a dark site, it is considerably easier in larger glasses and I recommend a minimum of 70mm. Given the usual brightness of UK skies near the horizon, September is probably the latest you can realistically expect to see it in binoculars.

In September, we are able to look out of the plane of the Galaxy during the evening. This makes more globular clusters and galaxies available for observation. Very well placed this month are **M81 (Bode's Nebula)** and **M82 (The Cigar Galaxy)**, both of which are easy in a 50mm binocular. These 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. If you have good skies, try **M51 (The Whirlpool)** and **M101** which, although it is a large object, is very difficult owing to its low surface brightness. The same can be said of **M33 (The Pinwheel)**, which is considerably easier at the end of the month than it is at the beginning. Because they are of such low surface-brightness, they benefit from low magnification. This generally makes them easier to see in, say, a 10x50 binocular than in many "starter" telescopes. The **Great Andromeda Galaxy, M31**, is easily visible this month. It is large and bright enough to be able to withstand quite a lot of light pollution (making it available to urban observers) although, obviously, it benefits from a dark transparent sky.

The Deep Sky (contd)

The two Hercules globulars, **M92** and the very impressive, and very easy to find, **M13** are at a very good altitude for observation. Although **M13** is clearly larger than **M3**, it is easier to resolve the outer stars of the latter one. Also visible this month is **M5** in Serpens, which is one of the largest globular clusters known, being 165 light years in diameter. Its apparent size is nearly as large as a Full Moon. At a reasonable altitude throughout the month are the very bright **M15**, **M2** (which looks almost stellar at 10x50) and **NGC 6934**. This last cluster is very easy to see and is excellent for demonstrating how globular clusters respond to transparency. In apertures of around 70mm and upwards, almost all of them look larger as the sky becomes more transparent. **NGC 6934** displays to the greatest extent of any globular on which I have tested the phenomenon.

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 easiest planetary nebula, **M27 (the Dumbbell Nebula** – although I insist that it looks more like an apple core than a dumbbell!) – is visible in the evening skies in even 30mm binoculars. At the other extreme, if you have binoculars of at least 100mm aperture, see if you can find and identify **NGC 6572**, a planetary nebula in Ophiuchus. Even in large glasses it looks stellar, but it has the distinction of being possibly the greenest object in the sky. September is

The Deep Sky (contd)

probably the earliest in the year that *the Helix Nebula, NGC 7393* is observable in Britain before midnight.

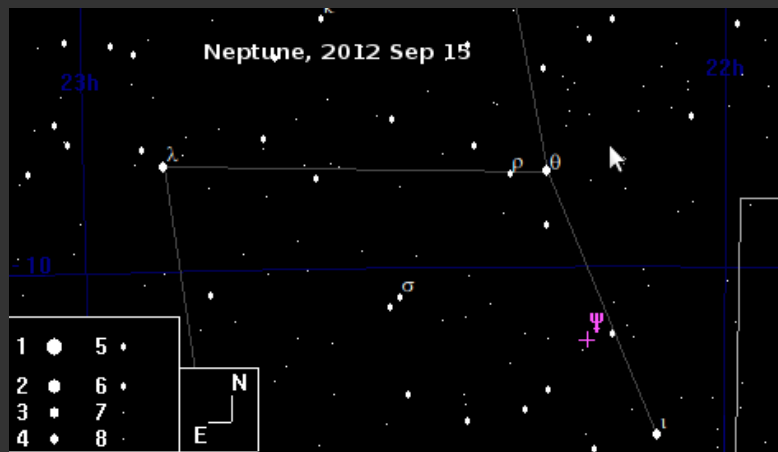
Planetary Nebulae are short-lived (generally a few tens of thousands of years) masses of gas and plasma that result from the death of some stars. They have nothing to do with planets, but get their name from the fact that, in early telescopes, they had the disc-like appearance of planets.

The two bright emission nebulae, *M20 (the Trifid)* and the larger, brighter and easier *M8 (the Lagoon)* are now sinking into the twilight; you will need a good south-western horizon if you are to have a realistic chance of observing them. They are only about a degree and a half apart, so they will fit into the same field of view of even quite large binoculars.

For interactive maps of Deep Sky Objects visible from 51 °N, please visit:
http://binocularsky.com/map_select.php

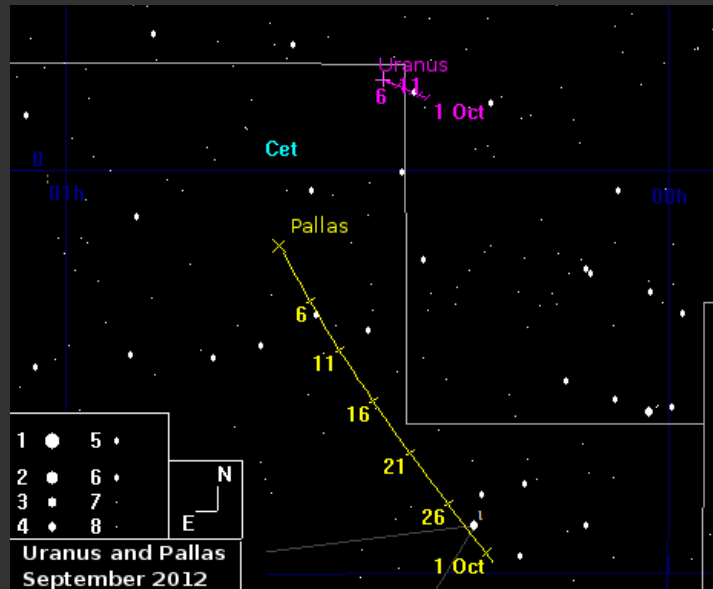
Planets

Of the two binocular planets, Neptune rises just before sunset at the beginning of the month. It is approximately at the south-western apex of an equilateral triangle that has σ and θ Aqr as its other apexes.



Planets (contd)

Uranus rises about an hour later, on the boundary of Cetus and Pisces; see if you can find the 9th magnitude asteroid 2 (Pallas), which is about 4° to the south-east at the beginning of the month and 11° to the south by the month-end.



There is a close conjunction of the asteroid Ceres with the **Crab Nebula (M1)** in the early hours of the 3rd, with the asteroid passing less than 2° south of the nebula.

The Moon

- Sep 08 Last Quarter
- Sep 16 New Moon
- Sep 22 First Quarter
- Sep 30 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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