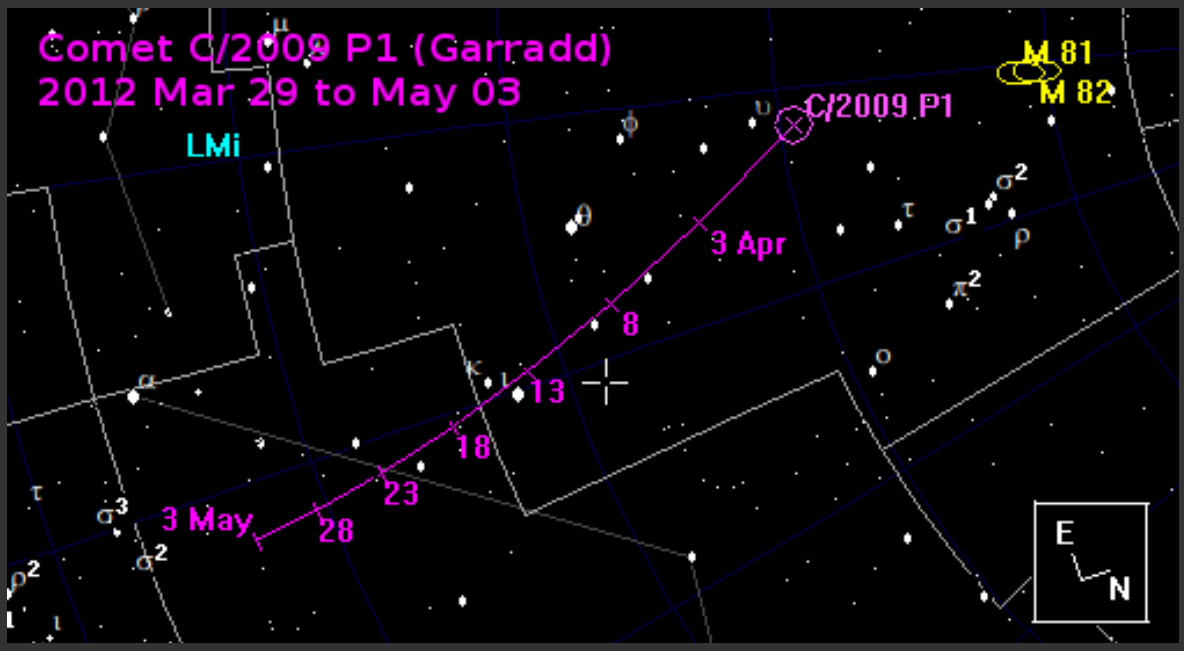
Introduction

Welcome to the April 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.

Transient Objects

The only transient object of note this month is Comet C/2009 P1 (Garradd), which is making its way from Ursa Major through Lynx. It is circumpolar and visible all night, but is best observed in the evening. During the month its brightness falls by over a magnitude and a half, but it will still be visible, but difficult by month end, in a 50mm binocular in dark, transparent skies.

Date	RA	Declination	Magnitude
2012 Mar 29	09h48m22.80s	+60 31' 24.1"	7.9
2012 Apr 03	09h26m53.25s	+56 21' 55.0"	8.1
2012 Apr 08	09h12m39.12s	+52 23' 35.7"	8.3
2012 Apr 13	09h03m11.55s	+48 42' 42.4"	8.5
2012 Apr 18	08h56m58.90s	+45 21' 02.9"	8.8
2012 Apr 23	08h53m03.43s	+42 18' 14.0"	9.0
2012 Apr 28	08h50m47.23s	+39 32' 52.2"	9.2
2012 May 03	08h49m44.51s	+37 03' 09.9"	9.4



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

The *Pleiades* (M45) and the *Great Orion Nebula* (M42) culminate before Civil Twilight ends, but are still fine sights in binoculars, as are the trio of open clusters in Auriga 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. Also high are M44 (*Praesepe*) and M67 , two fine open clusters in Cancer. Lower in the southern sky are more open clusters M46 & M47 and, near Sirius, M41.

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 April, 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. Look out for the two galaxy trios in Leo (M95/96/105 and M65/66/NGC3628) and

The Deep Sky (contd)

Markarian's Chain in Coma Berenices. If you have a big binocular, also observe the edge-on NGC4565 (*Berenice's Hair Clip*), which is next to Melotte 111, the cluster that gives Coma its name. You should find M81 (*Bode's Nebula*) and M82 (*The Cigar Galaxy*) easy in a 50mm binocular. These can be used as a good demonstration of averted vision: if you have them both I 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*).

The globular cluster M3 is a good one to start with during an April evening's observing. Later in the evening, the two Hercules globulars, M92 and the very impressive, and very easy to find, M13 are at a better altitude for observation.

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.

If you have binoculars of 70mm aperture or (preferably) greater, see if you can find and identify *The Ghost of Jupiter (NGC 3242)*, a planetary nebula in Hydra. It is a difficult object because it is low in the sky, even from southern Britain.

Planetary Nebulae are short-lived (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 appearance of giant planets.

The Deep Sky (contd)

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

The Solar System

Planets

Venus itself is high in the west at dusk. It is difficult, owing to its brightness, to make observations of it in a dark sky but, if you observe it in bright twilight, with good optics and magnification of x15 or (preferably) more, you may be able to detect a change in its phase as its diameter slowly grows throughout the month. It will show a waning crescent during the month; it will be just over a quarter-illuminated by month end.

Meteor Showers

The Moon is New for the April Lyrids, which peak on the night of the 21st/22nd. They usually peak at a rate of 20 to 30 per hour, but have sometimes had outbursts of over 100/hr, which makes them very much worth watching. These meteors are dust particles from the tail of Comet Thatcher. As these particles enter the atmosphere, they compress and heat the air in front of them. This heat causes the surface of the particle to ablate and ionise. Binoculars are useful for observing the persistence of these ionisation trains that form the streak in the sky which is what we observe as a “shooting star.

The Moon

Apr 06	Full Moon
Apr 13	3rd Quarter
Apr 21	New Moon
Apr 29	1st Quarter

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