

# Comet Lovejoy and Messier's Black Sheep

2014 December newsletter of the ASSA Deep-Sky Observing Section



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The appearance of Comet Lovejoy (C/2014 Q2) and its appulse with Messier 79 (NGC 1904) has prompted this final Deep-Sky Section newsletter for 2014. Let's get the shallow-sky bit out of the way, OK?

Comet Lovejoy is a (very) long period comet that will reach perihelion on January 30. It is in Lepus at the time of writing, and will move on into Eridanus (Jan 02 to Jan 09), Taurus (Jan 09 - Jan 16), Aries (Jan 16 - Jan 25) and Triangulum (Jan 25 - Jan 30). During its Taurus/Aries stint it is expected to be at its brightest, predicted to reach about 4th magnitude.

On December 28/29, Lovejoy made a close approach to the globular cluster M 79, the most prominent deep-sky object in Lepus and arguably the black sheep of the Messier list.

The cover photo, taken by Dieter Willasch, shows the comet and star cluster beautifully. Dieter used a Takahashi FSQ 106 ED f/5 refractor mounted on an Astro-Physics 900 GTO with an SBIG STL 11000M camera to image the scene. Four 6-minute Luminance frames and six 3-minute R, G and B frames each were combined to create the final image. The sub-frames were exposed starting at 23:16 on 2014 December 28 and ending at 00:32 on December 29. Further details, and a high-resolution version, are available on his website [ <http://astro-cabinet.com> ].



**Comet Lovejoy (C/2014 Q2).** Imaged by Dieter Willasch from Somerset West on 2014 December 27. Lovejoy's coma was in Columba and its tail stretched into Lepus when this image was taken. (Photographic details: Takahashi FSQ 106 ED f/5, Astro-Physics 900 GTO mount, SBIG STL 11000M. Subs: 30 minutes RGB, 24 minutes Luminance.)

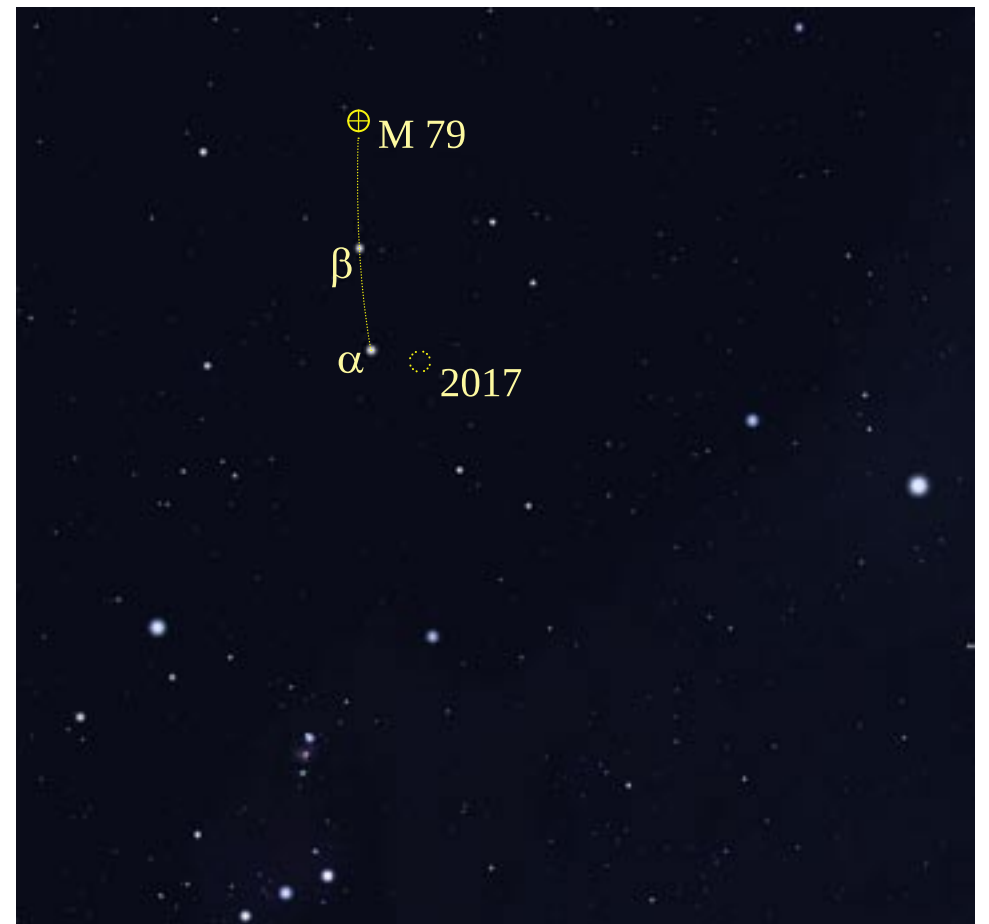
## Finding M 79

Messier 79 (NGC 1904) is ridiculously easy to find. Start by locating Lepus, which lies at Orion's feet (first diagram). The constellation is essentially seen as three pairs of stars, with the central pair,  $\alpha$  Lep and  $\beta$  Lep, being the brightest. These two stars (a.k.a. Arneb and Nihal) are slightly over  $3^\circ$  apart, so they comfortably fit into the field of view of binoculars.

As the second diagram shows, M 79 lies at the tip of a line drawn from  $\alpha$  Lep to  $\beta$  Lep and extended onward for a bit ( $4^\circ$  as opposed to the  $3^\circ$  gap between the stars). QED.



**Finding Lepus the Hare.** Balancing on its bunny-rabbit ears for southern hemisphere viewers, Lepus is an easy constellation to pick out, "beneath" the feet of Orion. appearing as three pairs of stars.



**Finding Messier 79.** By simply drawing a line from  $\alpha$  Lep to  $\beta$  Lep and extending it the same distance plus a bit you arrive at the 7th magnitude globular cluster M 79. While there, check out NGC 2017.

## Taking a look at M 79

M 79 has been tagged with “I’ve seen it with just my naked eye” by more luminous observers, but this writer is not convinced (despite the fact that enthusiasm is a wonderful personality trait). Binoculars or a small finder scope certainly deliver.

Sweeping in binoculars from  $\alpha$  to  $\beta$  and then to where the globular lies shows, at first glance, three stars in a row (oriented north to south). The central star is subsequently seen as being clearly fuzzy – a small round 9th magnitude glow, like a star in mist. About half a degree west-southwest lies a pale yellow 5th magnitude star (HR 1771) serving as a convenient marker. (In the cover photo this is the bright star above the word “sheep” in the title.)

A telescope shows a magnificent object. A four-inch begins to reveal some of the cluster members, scattered in the periphery. Larger telescopes show an interesting core and several charming strings of stars. What do you see?

## Elsewhere

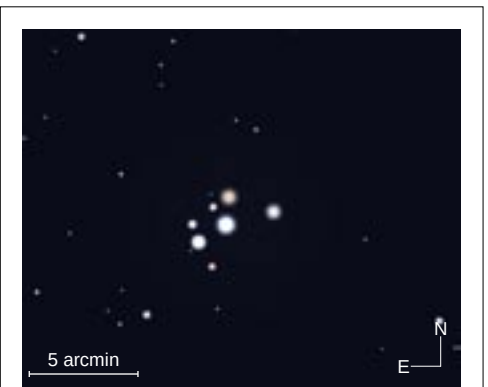
Two other objects in Lepus are certainly worth attention. The first is NGC 2017, a suspected open cluster first spotted by John Herschel in 1835. He recorded ‘a fine clustering group of large stars’, located  $1.5^\circ$  due east of Arneb ( $\alpha$  Lep, remember). Despite being kicked out of the NGC by Sulentic and Tifft in 1973, NGC 2017 is a gorgeous sight in even a small telescope.

Australian deep-sky doyen E J Hartung, despite saying that it “can hardly be called a cluster” called it an “attractive grouping of apparently six stars... [which] shows different colours, yellow, orange, bluish and ashy. Close examination discloses that the bluish star is a small pair... and that the brightest star is also a close pair.”

The highly-accomplished American astronomer Brian Skiff noted it as an “attractive group of four stars with a few background ones. Lightly coloured yellow, blue, and orange,” while our own Magda Streicher noted, in 2002, that “it can undoubtedly be considered as one of the most beautiful objects” – high praise for a Nonexistent object!



**Bright stars near Messier 79.** Two 9th magnitude stars flank M 79; a 5th magnitude pale luminary lies  $36'$  away.



**NGC 2017.** View of this sparse wanna-be open cluster as seen by *Stellarium*.

Another Lepudlian object worth looking up is R Leporis, tucked into the north-western border of the Hare (see the star chart adjacent). It is a long-period variable star, varying between 6th and 12th magnitude over a period of 432 days. What makes this star exceptional is its deep red colour. Known as Hind’s Crimson Star, this telescopic gem has a colour index (B–V) of +5.74. The more positive this index, the redder the star appears. For comparison, Betelgeuse has  $B-V = +1.85$ , Antares has  $B-V = +1.83$ , and gamma Crucis has  $B-V = +1.59$ . A good star chart will show R Lep; otherwise you may cheat and use a GOTO scope and look up HR 1607 or HD 31996.

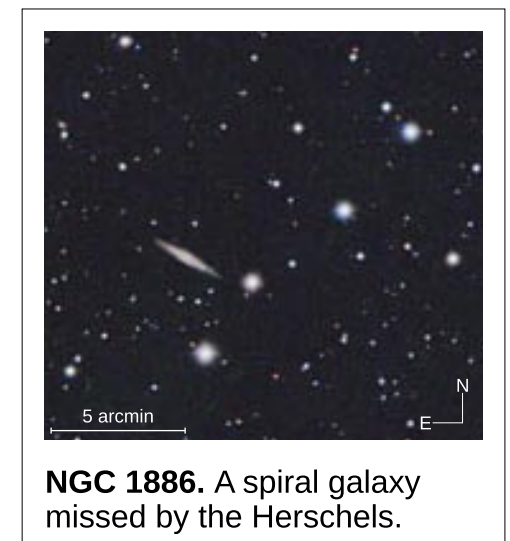
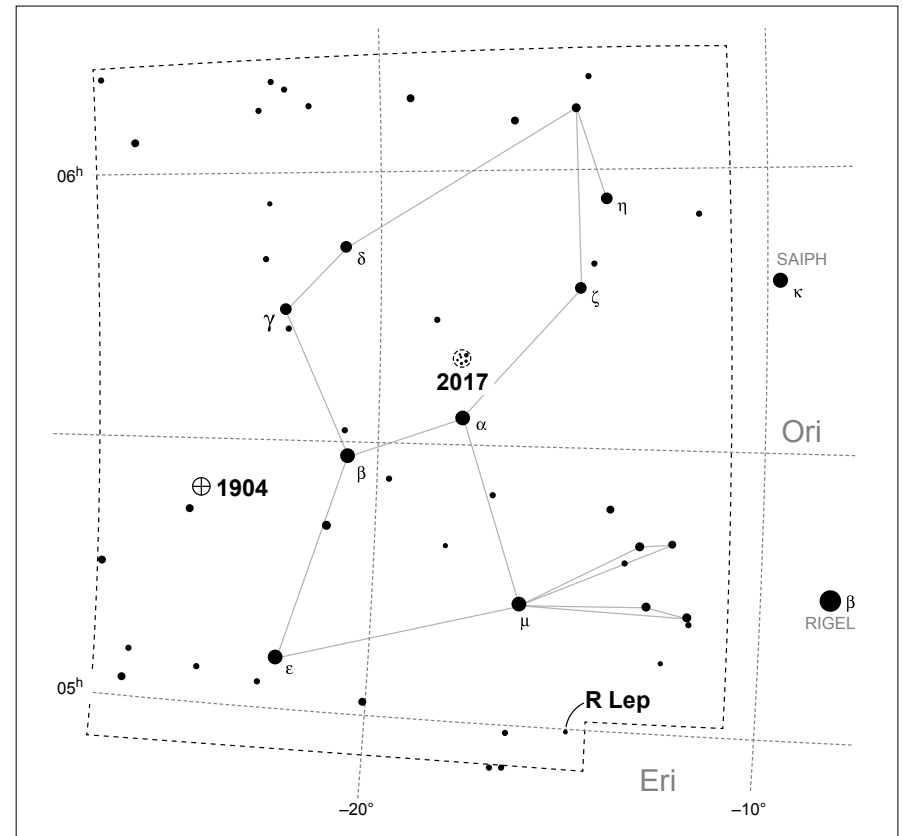
## And finally

Unlikely to be on anyone’s bucket list of things to see in binoculars is NGC 1886, an edge-on spiral galaxy missed by the formidable Herschels. The accompanying diagram is cropped from the cover image – see how quickly you can find it there.

NGC 1886 was discovered – wait for it – in 1886. The only other object discovered in the same year as its eventual NGC number is NGC 1826, by Dunlop, in the LMC.

NGC 1886 was first seen by Frank Muller who was observing (visually) with the brand new 26.25-inch (f/14.9) Alvan Clark refractor of the Leander McCormick Observatory (Charlottesville, Virginia, USA). At the time, this huge telescope shared “largest telescope in the USA” with the instrument at the US Naval Observatory. Today it remains the largest Alvan Clark refractor still mounted on its original Clark mount.

While you don’t need a 26.25-inch refractor to see NGC 1886, every bit of aperture-inch does help. Veteran observer Steve Gottlieb, using a 17.5-inch Dobsonian, calls it “faint, fairly small, even surface brightness.” Can you glimpse it in a 10-inch?



**NGC 1886.** A spiral galaxy missed by the Herschels.

## Why Messier's "black sheep"?

Probably more than any other Messier object, M 79 is the least observed treasure on this gentleman's deep-sky list. Even the popular observing guides devote only the bare minimum coverage to this lovely southern object. Perhaps its proximity to the Orion Nebula renders it invisible, like many other deep-sky objects: who looks at NGC 362 when 47 Tuc is around? For that matter, has anyone seen NGC 2808 (or NGC 3114) lately? Probably not – just a stone's throw away are the eta Carinae Nebula and the Southern Pleiades!

I look forward to receiving a slew of observations and photos of NGC 1904! (That's Messier 79, in case you weren't listening.)

Wishing you clear skies for 2015,

Auke.