Some 40′ to the WNW lies NGC 3391, a 13th magnitude galaxy between two 9th magnitude stars. Some 20′ south-west of Leonis 52 lies NGC 3377, a 10th magnitude elliptical galaxy about 4.4′ across . *Uranometria 2000* indicates a second galaxy (NGC 3377A) lying between NGC 3377 and Leonis 52. Can you spot this galaxy? Due south from Leonis 52 lies the spiral galaxy NGC 3367 at magnitude 11.5, irregularly shaped, which brightens gradually towards the middle.

Westwards from Leonis 52, about 20′, lies NGC 3357. At 15th magnitude it will be very difficult to spot, perhaps no more than a very faint splodge of light, even at high powers. Travelling WSW from this galaxy about 1° brings us to a 7th magnitude star on the western edge of NGC 3338, an 11th magnitude, nearly edge on, spiral galaxy, 5.5′ across.

The next group lies in the vicinity of Gamma Leonis. There are four galaxies in this group, the brightest being the pair NGC 3226 and 3227, the former at magnitude 11.4, the latter at 10.8. It is possible that these two galaxies are interacting. NGC 3222 is found about 10′ west of the pair. A very faint NGC 3213 is a found 20′ south-east of Gamma Leonis.

Half way between Gamma Leonis and Zeta Leonis lies a group of four galaxies: NGC 3185, 3187, 3190 and 3193. At a low power it is possible to get all four in the same field of view. NGC 3190 and 3193 are the easiest to see, both being 11th magnitude. NGC 3190 shows slight elongation, being nearly edge on to us. NGC 3193 has a 9.5 magnitude star on its north-west edge. The other two are more difficult to spot, as NGC 3185 rates 12.2 magnitude, with NGC 3187 at 13.1. NGC 3185 is the more rounded of this latter pair.

That gives the introduction to some of the many galaxy clusters that can be found in Leo. Others that I could mention are the NGC 4005 group found on the border with Coma Berenices, some 14 galaxies in all, between 14th and 15th magnitude - quite a challenge visually. South-west from there lies Copeland's Septet, 7 galaxies in a very tight group, again very faint at between 13th and 15th magnitude. South-east from there lies a large cluster of some 27 or so galaxies, centred about 1° from 93 Leonis, again all extremely faint at 13th - 15th magnitude. Many others exist that you can discover for yourselves by just browsing through the star atlases.

But the real challenge is this: Can you see them with the 14-inch SCT? Happy hunting!

References and further reading

Sinnott, R.W. *NGC 2000.0* Sky Publishing and Cambridge University Press, 1988

Tirion, W., Rappaport, B., Lovi, G. *Uranometria 2000, Vol. 1,* Willmann-Bell, 1988

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Galaxy hunting in Leo

by Mark Humphrys

Browsing through the 13,226 objects found in the NGC and IC 2000 catalogues (Sinnott, 1988), one comes across some 817 entries found in the constellation of Leo, all of which are galaxies. Leo is a rich hunting ground for all types of galaxies, but the problem is where to start? I decided to start with the star atlas *URANOMETRIA 2000*. Leo's 947 square degrees of sky takes some 12 pages in the atlas. At first glance one can see that many of the galaxies seem to form into tight clusters or groups. It is these groups of galaxies that I am going to concentrate on.

The first group is the M65 + M66 group, lying about 2½° south-east of the star Theta Leonis. On a good night they are visible with a pair of binoculars, but at 9th magnitude they appear no more than a smudge of light. With the larger 'scope far more detail is visible. M66 (NGC 3627) is an irregularly shaped spiral galaxy, its spiral arms showing clumps of stars and dark dust lanes. It is about 8.7′ by 4.4′ in size. M65 (NGC 3623) is slightly fainter than its companion, at magnitude 9.3. Being 10.0′ by 3.3′ in size it appears rather elongated. It is highly tilted, with its eastern edge towards us. You should be able to make out a dust lane along this edge. Both of these galaxies are of the Sb type, that is barred spirals. Above these two galaxies lies a third, NGC 3628, roughly 35′ north of M66. Though it has a magnitude of 9.5, it is considerably more difficult to spot as it has a low surface brightness due to its large size (14.9′ x 3.6′). However, it is easy to start from M65 via a 7th magnitude star lying half way between the two.

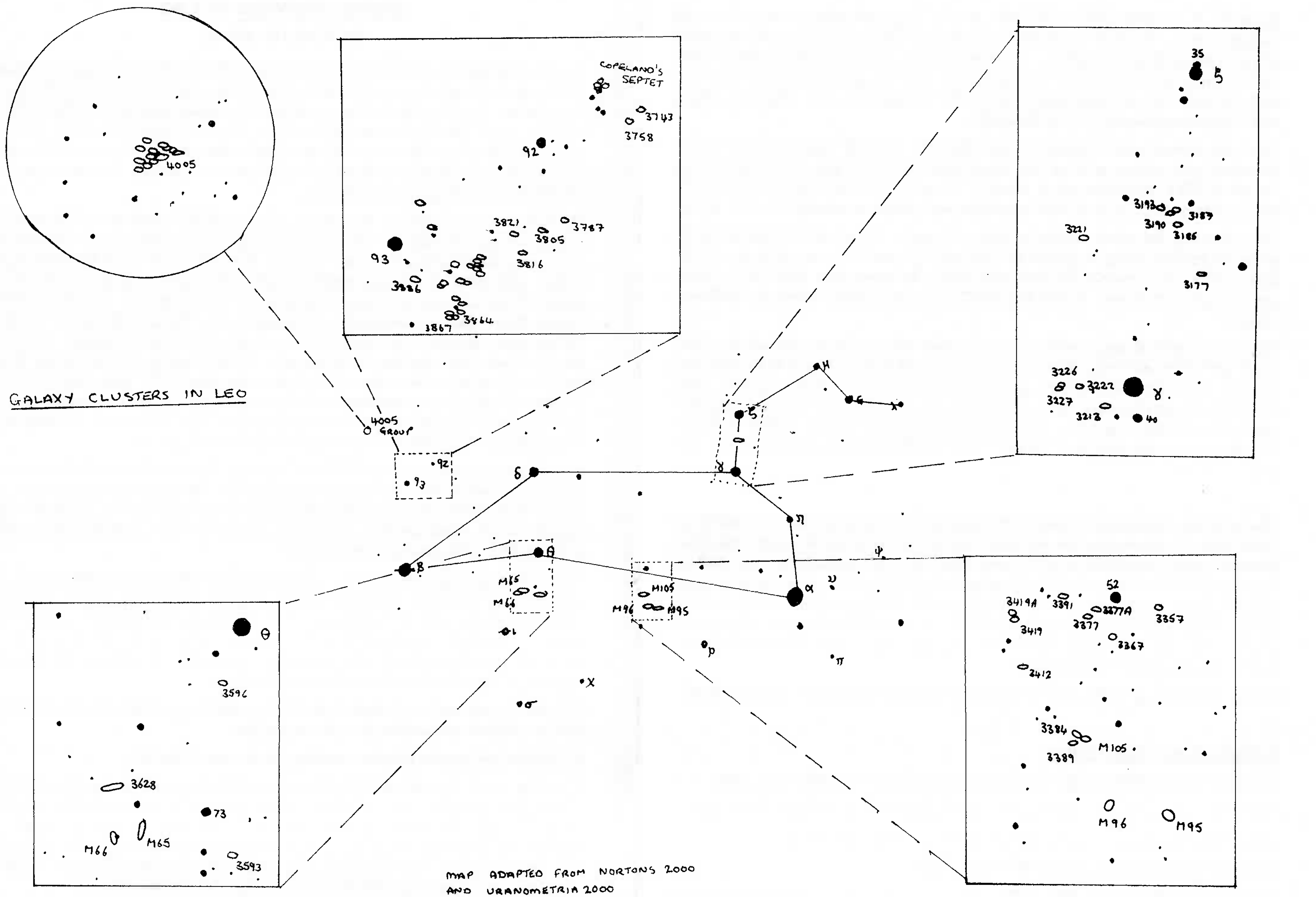
The next group to explore is the M95 + M96 group. These can be found about 9° east of the brightest star of the Leo constellation, Regulus. Again binocular objects on good nights, M95 (NGC 3351) has a magnitude of 9.7, while M96 (NGC 3368) is slightly brighter at 9.2. Both are of a similar size, around 7′ by 5′, and are spiral galaxies, although M95 is classified as a barred spiral.

Travelling NNE from M96 about 48′ you will find the trio of galaxies, NGC 3389, 3384 and 3379, the latter more commonly known as M105. NGC 3389 is an Sc type galaxy, around 2.7' in size and 11.8 magnitude. NGC 3384 is slightly brighter at magnitude 10 and 5.9′. This highly flattened elliptical galaxy has a bright centre. The brightest of this trio is M106 at magnitude 9.3. Close inspection should show that it is slightly elongated, and that the western side of the nucleus is the brightest.

With low powers and a wide field it should be possible to get M105, M96 and M95 all in the same field of view, making for a dramatic sight.

Enough for easy targets; now for something a little more difficult!

Travelling north from the M105 group about 1.5° brings us to a group of galaxies consisting of around 8 members, strung out along an arc centered on the fifth magnitude star Leonis 52. Starting in the east, there are two galaxies very close together. In *Uranometria 2000* they are named as NGC 3419 and 3419A, although the *NGC 2000.0* lists only 3419 as a 13th magnitude, very small, rounded and faint galaxy, a difficult object indeed, and no mention of the second galaxy. Can you spot the two? »


GALAXY CLUSTERS IN LEO
4005
COPELAND'S SEPTET
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3412
3384
M105
3389
M96
M95
MAP ADAPTED FROM NORTONS 2000
AND URANOMETRIA 2000