The never changing Chamaeleon

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Image source: Stellarium.org

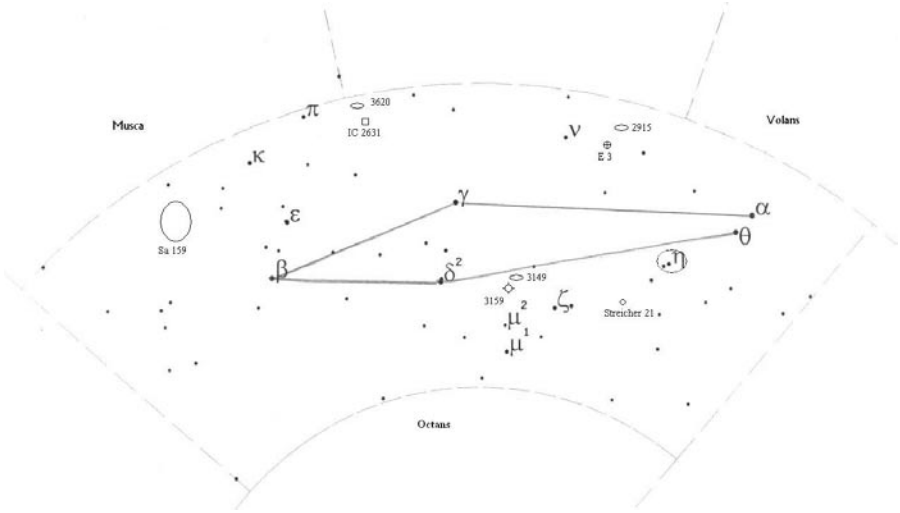
If there is one constellation named after one of the cutest little animals on earth, it has to be the chameleon – its slow, deliberate, step-by-step movement, elegant curly tail and historical appearance makes the chameleon one of the most impressive creatures ever. The dwarf chameleon occurs only at the south-western tip of South Africa, in areas of relatively dense vegetation. Another species is found in other parts of South Africa.

According to Auke Slotegraaf, this little land animal probably so impressed the Dutch seafarers that Pieter Plattevoet placed it on record as a star formation in 1598. The constellation was later published by Bayer as a companion to Musca the Fly, where it rightfully deserves its place among the stars.

Chamaeleon is situated only 10 degrees north of the south celestial pole. The rich Carina part of the Milky Way can be seen directly north of it. To the north-east is Musca the Fly, the only constellation named after an insect, dangerously close to the starry chameleon – fortunately facing the opposite direction, towards the constellation Mensa. Although Chamaeleon is quite faint – it contains no stars brighter than magnitude 4 – it must not be underestimated in any way.

When I first heard of the very talented and now well-known South African singer/songwriter, Chris Chameleon, I immediately thought of our own southern constellation by the same name – each of them so exceptional in their own right! So, while planning this article, I could not resist contacting Chris, and to my utter delight he agreed to contribute with some very appropriate words, written in his distinctive style:

"not everybody gets a constellation named after them. well, i know i don't. but there happens to be this merry coincidence between my name and that of an inconspicuous constellation in the southern sky: chamaeleon! and it could just as well have been named after me, because there are many similarities between us. firstly, it is made up of, primarily, three stars. the letter three has been one of the most



important numbers to me for much of my life. emotional episodes, business ventures and even luck have all come in threes for me. i love the number, it's my favourite number. furthermore, the fact that it is an inconspicuous constellation is uncannily apt! that is what a chameleon does isn't it? a chameleon is meant to be there, pretty (as far as i am concerned though, i'll settle for 'interesting'!) to look at and unmistakable, but not easy to find in the first place. it blends into the night sky, concealing itself amongst the stellar foliage. then, the fact that it is in the southern sky also particularly appeals to me. for my work i strut my stuff all over south africa, in the usa, in the netherlands, in belgium, in england, in namibia (and even in rwanda!). but there is no place i can call home unless it's south africa. neither lights nor money nor temptations of an allegedly better life elsewhere prompt me to leave this country and the nocturnal firmament of a karoo night. i am at home in it as much as the chamaeleon constellation is in it's skies! finally, it confirms the chorus of what has, to date, been the biggest hit of my career, a song quite appropriately called "sterredank":

and when i look up and i count my stars
i see how they predict my future
for what i read in their shape and size
is that the road ahead is shiny bright!"

The starry Chamaeleon stares into the night sky with two wide-open eyes, so to speak, represented by the magnitude 4 alpha and magnitude 4.3 theta Chamaeleontis, situated in the far western extreme of the constellation. The two stars shine with a lovely yellow hue and a dirty orange colour.

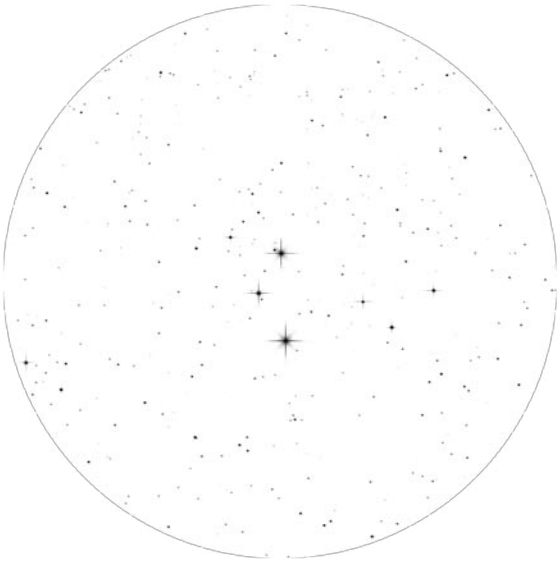
The stars around **eta Chamaeleontis**, 1.8 degrees south-east of theta Chamaeleontis, have been identified as a brand-new open

cluster (see picture). The cluster contains approximately ten super-white members which display the same proper motion through space. This now well-known cluster was only discovered in 1999 and has proved to be situated just 329 light years away and formed about 10 million years ago. Being, as far as we know, the fourth closest cluster to us, three of its members are visible in binoculars. What is more, there is an extremely faint galaxy, PGC 24516/ESO 18-G13, less than two arc-minutes east of eta Chamaeleontis, sharing this new cluster's territory.

The galaxy **NGC 2915** can be imagined to be riding on the back of the starry Chamaeleon. It is situated around one degree north-west of the magnitude 5.4 nu Chamaeleontis, in the northern part of the constellation. The galaxy displays an elongated north-west to south-east glow, pointing north-west to a pair of faint (magnitude 13) field-stars. Higher power and averted vision reveal a haze around the outer edge with a slightly brighter nucleus. About 8 arc-minutes to the south-west of the galaxy, the very yellow to orange magnitude 7.8 star HD82188 dominates the field of view.

The relatively unknown globular cluster ESO 37-01, or **E3** for short, is situated 43 arc-minutes south of the galaxy NGC 2915. Due to loss of stars resulting from tidal effects, E3 is a very loose, star-poor globular, one of the faintest known thus far. The globular reveals itself with just a soft glow between a handful of faint stars. With averted vision it grows slightly larger, but I was not able to see any points of scattered light. Perhaps this globular with its unusual name could inspire Chris to write a new song, dedicated to its unique name and place among the stars.

Situated halfway between eta and iota Chamaeleontis is the asterism **Streicher 21** (*Deep-Sky Hunters Catalogue*). It consists of a handful of magnitude 9 stars in a well-formed line from north-west to south-east that stands out beautifully against the back-



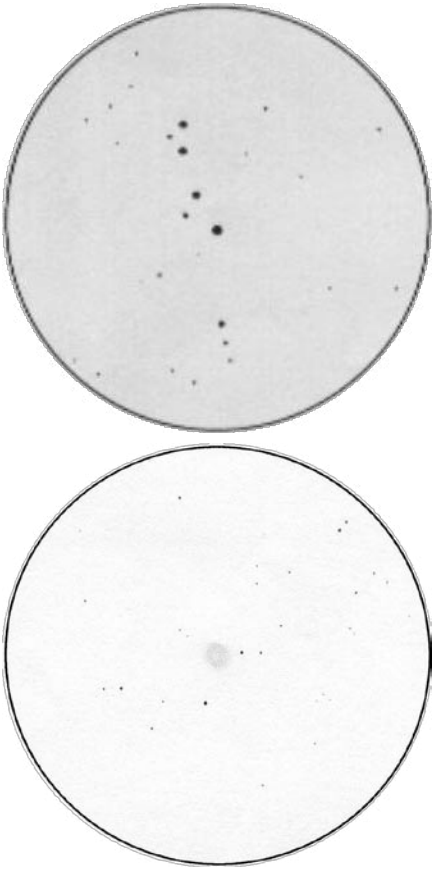
The eta Chamaelontis open cluster, photographed by Lucas Ferreira (negative image shown for clarity).

ground star-field. The shape of the stars resembles a reptile of another sort to me, complete with a tail pointing to the south.

Nicely tucked underneath the belly of Chamaeleon is the very faint galaxy, **NGC 3149**, situated 1.3 degree north-east of the magnitude 5 zeta Chamaeleontis. This faint, slightly oval, hazy glow in an east-to-west direction is barely visible, with just a glimpse of a brighter middle area. My notes indicate it to be a very difficult object to observe.

Do not give up hope, though. The beautiful, bright, remarkable planetary nebula **NGC 3195** is situated just around the corner, only 30 arc-minutes south of NGC 3149. Between these two deep-sky objects is a beautiful double star of around magnitude 9.5, displaying colours of yellow and orange. This planetary nebula is an appreciable soft grey mist, slightly oblong in shape (see sketch). With higher power, more of its characteristics come to the fore. The nebula becomes more clearly defined towards the western side in contrast with the eastern portion, which appears somewhat washed out. With the use of an oxygen filter the middle section becomes slightly darker, indicating that the planetary is hollow, but sadly, there was no central star to be seen. John Herschel discovered this planetary in 1835.

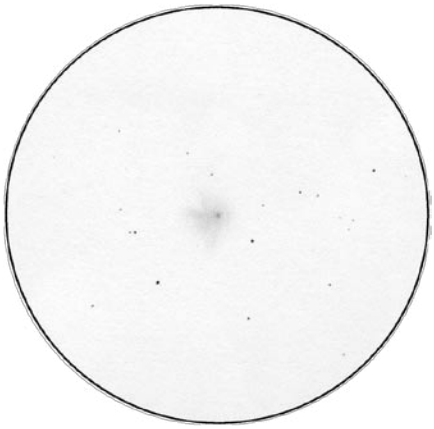
The double star gamma[1] and gamma[2] Chamaeleontis stands out exceptionally well because of the deep yellow colour of both stars and very aptly indicates the curved back of the little starry creature's form. The relatively brightly reflecting nebula **IC 2631** is situated 2.8 degrees north-east of gamma Chamaeleontis. It is a beautiful object, resembling in its soft play of light, a piece of illuminated frosted glass (see sketch). Using averted vision, hazy streaks of brighter nebulosity blow away from the magnitude 9 central star. The haze is slightly broken



Sketches of the Streicher 21 asterism (top) and NGC 3195 planetary nebula.

down towards the north-western side of the nebula. What held my attention was that the whole area seemed to be bathed in a misty cloud.

The edge-on galaxy **NGC 3620** is situated just 32 arc minutes north of IC 2631 and 32 arc minutes off the border with the Carina constellation. Only with averted vision can the thin, soft and faint substance of the galaxy be seen. This extremely faint galaxy appears in an east-to-west direction, and reveals a spotless surface without any outstanding features. A nice circle of faint field stars starts at the western side of the galaxy, extending around south.



IC 2631 sketched using my 12-inch telescope at 218 power. N is at the top and E to the left.

The constellation Chamaeleon is also home to a dark nebula which has been listed as **Sa 156** in Sandqvist's *Catalogue of Dark Nebulae,* published in 1977. Within an imaginary triangle, consisting of NGC 3620, beta Chamaeleontis and the border of Musca, this dark area can be looked for. It is a rather large dark patch around 3x2 degrees in area, lying in a roughly north-to-south direction, and is worth a search with the naked eye. But be sure to visit a very dark, transparent sky to be able to spot this elusive void.

We are indeed proud of the name Chamaeleon, whether linked to one of our country's top artists, the little land animal with its natural ability to change its colour and spots, or the renowned constellation Chamaeleon by the same name. ☆

Object	Type	RA (J2000.0)	Dec	Mag	Size
eta Chamaeleontis	Open Cluster	$08^h41.3$	-78°58′	5.4	8′
Streicher 21	Asterism	08 51.0	-80 10	11.0	22′
E3	Globular	09 21.0	-77 17	11.3	5′
NGC 2915	Galaxy	09 26.2	-76 38	12.4	2.4′ x 1.3′
NGC 3149	Galaxy	10 03.8	-80 25	12.8	2.0′ x 1.9′
NGC 3195	Planetary Nebula	10 09.5	-80 52	10.6	40″ x 30″
IC 2631	Reflection Nebula	11 09.8	-76 37	12.0	8.0′ x 7.0′
NGC 3620	Galaxy	11 16.1	-76 13	12.7	2.8′ x 1.1′
Sa 159	Dark Nebula	12 59.0	-77 10	-	3° x 2°