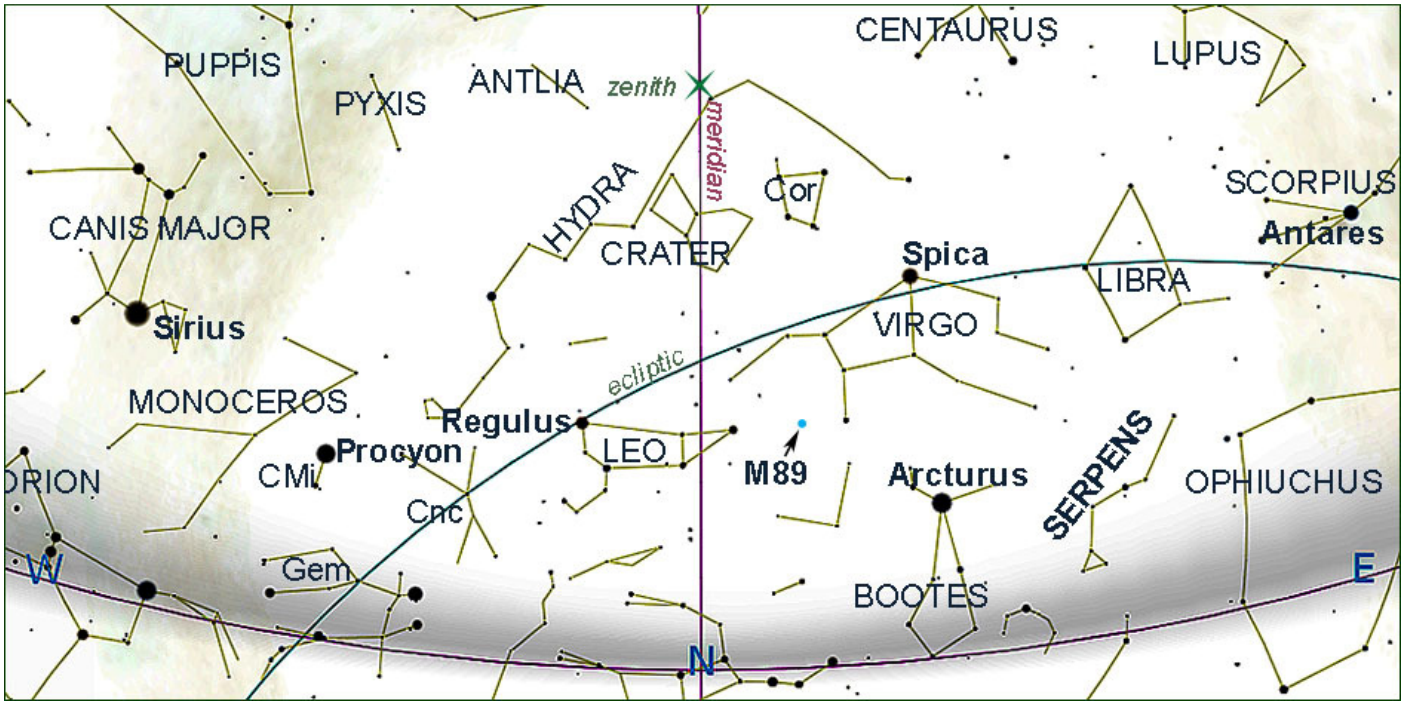
SKYNOTES from Hermanus

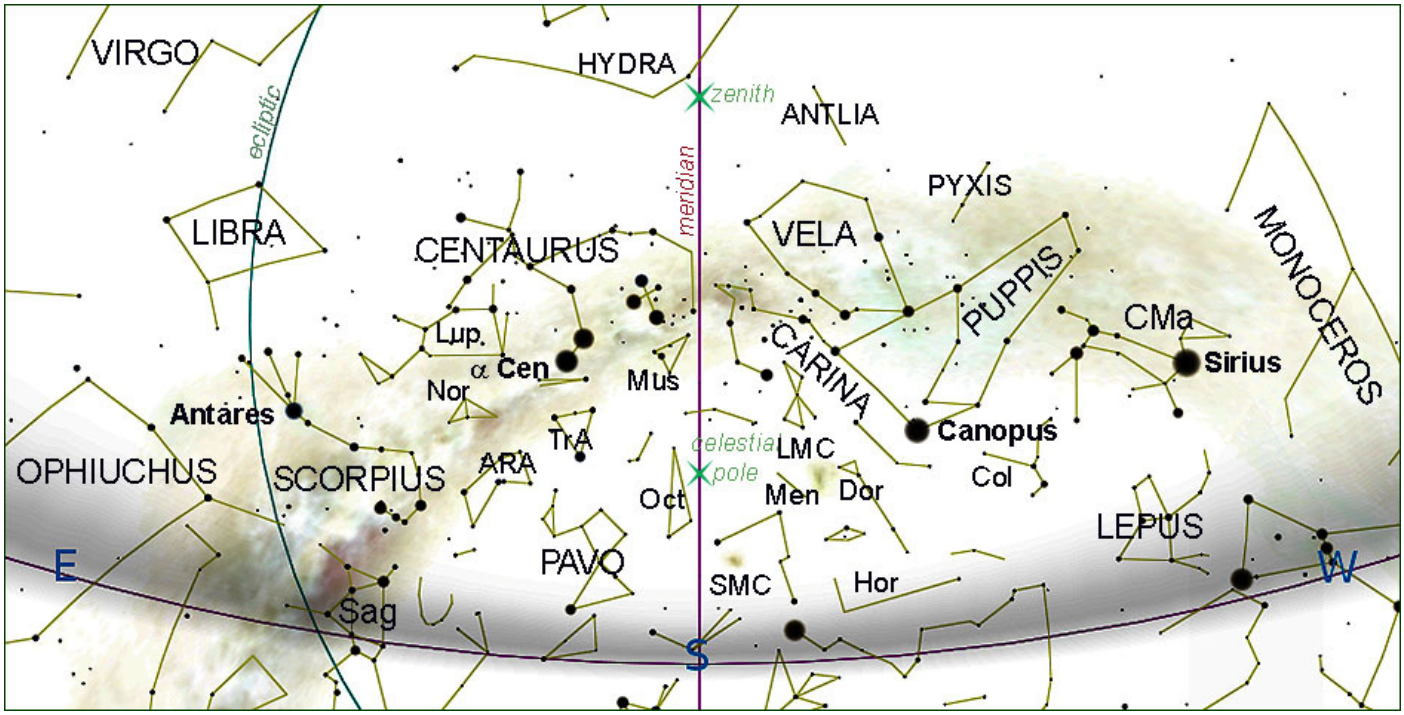
MAY 2021

1. SKY CHARTS

EVENING SKY 9th MAY at 21h00 (NORTH DOWN)



EVENING SKY 9th MAY at 21h00 (SOUTH DOWN)



2. THE SOLAR SYSTEM

PLEASE NOTE: All events predicted are as observed from **Hermanus, Western Cape, South Africa. Times are South African Standard Time (UTC +2).** *Also please note*: with the exception of **Pluto** (magnitude +14.4), all events predicted are visible to the naked eye.

HIGHLIGHTS FROM THE SKY GUIDE

Date	Time	Item
1	11h37	**Moon** southernmost
3	21h50	**Last quarter Moon**
		Moon near **Saturn**
4		**Mercury** near **the Pleiades**
5	01h21	**Moon** rises 4.1° south of **Jupiter**
		eta Aquarids meteor shower active
11	21h00	**New Moon**
	23h55	**Moon** at apogee (406 511 Km)
12		**Moon** near **Venus**
	12h29	**Moon** at ascending node
13	18h54	**Moon** sets 2° west of **Mercury** and 7.2° north of **Aldebaran** (α Tau)
16		**Moon** near **Mars**
	00h25	**Moon** northernmost (+25.6°)
17		**Moon** near **Pollux**
	07h59	**Mercury** at eastern elongation (22°)
		Venus near **Aldebaran**
18		**Moon** near the **Beehive** (M44)
19	21h13	**First quarter Moon**
		Moon near **Regulus**
23	16h00	**Moon** rises 7° east of **Spica** (α Vir)
		Saturn stationary
25		*INTERNATIONAL TOWEL DAY* *
26	03h53	**Moon** at perigee (357 309 Km)
	13h14	**Full Moon**
	17h57	**Moon** rises 4.2° east of **Antares**
	21h38	**Moon** at descending node
28	21h21	**Moon** southernmost (-25.6°)
29		**Venus** near **Mercury**
30		**Mercury** stationary
31		**Moon** near **Saturn**
		Mars near **Pollux**

* *INTERNATIONAL TOWEL DAY* - Celebrated every year on 25th May as a tribute to the author Douglas Adams by his fans. *https://en.wikipedia.org/wiki/Towel_Day* .

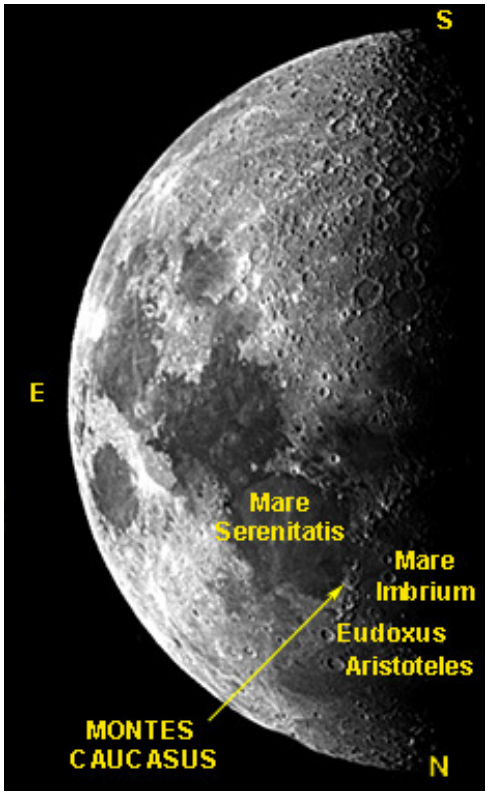
MAY 2021			*1st May*	*1st June*	*Visibility*
Sun Length of day	Aries to Taurus 10:43 to 10h00	Rises: Transit: Sets:	07h19 12h40 18h01	07h41 12h41 17h41	***Never look at the sun without SUITABLE EYE PROTECTION!***
Mercury Magnitude Phase Diameter	Aries to Taurus -1.1 to +3.0 82% to 7% 6" to 11"	Rises: Transit: Sets:	08h29 13h34 18h38	08h43 13h38 18h34	**Low in the west after sunset**
Venus Magnitude Phase Diameter	Aries to Taurus -3.9 99% to 95% 10"	Rises: Transit: Sets:	08h05 13h18 18h31	09h05 13h57 18h48	**Low in the west after sunset**
Mars Magnitude Phase Diameter	Gemini +1.6 to +1.7 93% to 96% 5" to 4"	Rises: Transit: Sets:	11h37 16h26 21h15	10h50 15h46 20h42	**Evening**
Jupiter Magnitude Diameter	Aquarius -2.2 to -2.4 37" to 41"	Rises: Transit: Sets:	013h31 08h09 14h46	23h41 06h19 12h54	**Morning**
Saturn Magnitude Diameter	Capricornus +0.7 to +0.6 167" to 18"	Rises: Transit: Sets:	00h17 07h09 14h00	22h13 05h08 12h00	**Morning**
Uranus Magnitude Diameter	Aries +5.9 3"	Rises: Transit: Sets:	07h18 12h38 17h59	05h24 10h43 16h03	**Too close to Sun. Before sunrise later in month**
Neptune Magnitude Diameter	Aquarius +7.9 2"	Rises: Transit: Sets:	03h26 09h39 15h52	01h27 07h40 13h52	**Morning**
Pluto Magnitude	Sagittarius +14.3	Rises: Transit: Sets:	22h52 06h02 13h09	20h48 03h59 11h07	**Morning**

Phase: In a telescope, the inner planets (Mercury, Venus and Mars) appear to us in phases, depending on the angle of the Sun's illumination, as does the Moon. The **angular diameter** is given in arc seconds (“). This is the apparent size of the object as we see it from Earth.

Magnitude: we are accustomed to hearing stars described in terms of 'magnitude'. For example the planet Jupiter at magnitude -1.8 is considerably brighter than the star Antares (in Scorpius) at +1.05. The scale is 'inverse'; the brighter the object, the lower the number. A 'good' human eye on a clear night can see down to a magnitude of about +6.

Transit: When an object crosses the **local meridian** it is said to **'transit'**. The local meridian is an imaginary line from the horizon directly north passing overhead (through *zenith,* see charts on page 1) to the horizon directly south.

THE MOON



MONTES CAUCASUS

Location: Marks the boundary between Mare Serenitatis and Mare Imbrium

Description: A substantial mountain range intersected by numerous deep valleys. Extends for some 526 Km and reaches a height of 3.6 Km

Readily visible in 10X binoculars. There are several breaks in the range where nearby lunar mare have intruded into the formation, particularly near the southern tip. Embedded within the eastern flank of the range is the crater Calippus. Along the eastern flank to the south of Eudoxus are the remnants of the crater Alexander

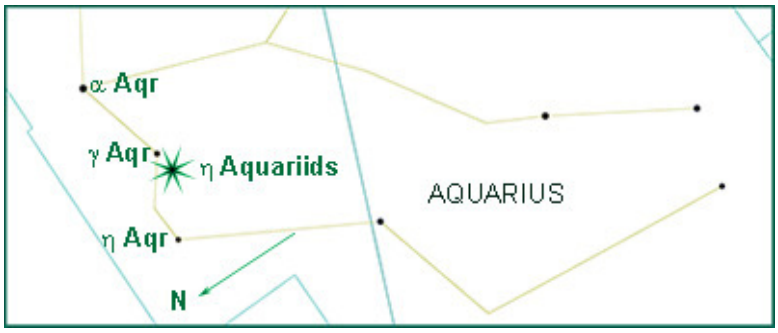
Naming: Named after the Eurasian mountain system by the 18th century German stenographer Johann Mädler

Best seen: Six days after new moon and five days after full Moon

Lunar and Solar eclipses : none visible from southern Africa.

Meteor Showers	*Max Date/Time*	*Observing Prospects*	*Duration*	*Radiant*	*ZHR*	*Vel.*
η Aquariids	6th May 03h30 – 05h30	Moon 21% *	21 April – 12 May	22h 24m / -2° (See chart below)	**60**	**65**

***** Prospects are poor with the moon rising smack in the middle of Aquarius at 02h18.



For more details regarding meteor watching,
please see the 2021 Sky Guide Africa South, pages 86- 87.

3. LOOKING UP

SUGGESTED OBSERVATION SCHEDULE for **MAY**
(Lunar observations notwithstanding)

Date	*dusk end*		*Moon*	
3rd	19h24	***rises***	23h04	(50%)
15th	19h16	***sets***	20h28	(14%)

CLUB STARGAZING – sorry, still no organised physical club gatherings. However, we do encourage our members to dust off telescopes, binos, cameras and eyes and observe from home or your favourite darkest, rural, cloudless spots.

Please consult our website for updates: http://www.hermanusastronomy.co.za

DEEP SKY HIGHLIGHTS

M89
NGC 4552

Description	Elliptical galaxy			
Constellation	Virgo		***Visibility***	
Distance	51 Mly, 15.33 Mpc	*Rise*	*Transit*	*Set*
Magnitude	+9.67	16h 41’ 18”	22h 08’ 31”	03h 39’ 40”
Absolute mag	-21.31			
Apparent size	8.1x 8.0 arcmin	*Naked Eye*	No	
Actual size	121Kly, 31Kpc	*Binoculars*	Yes	
Altitude/Azimuth *	40º 24’ 05” / 022º 15’ 10”	*Telescope*	Yes	
J2000 coordinates	+12º 33’ 00” / 12h 35’ 42”			

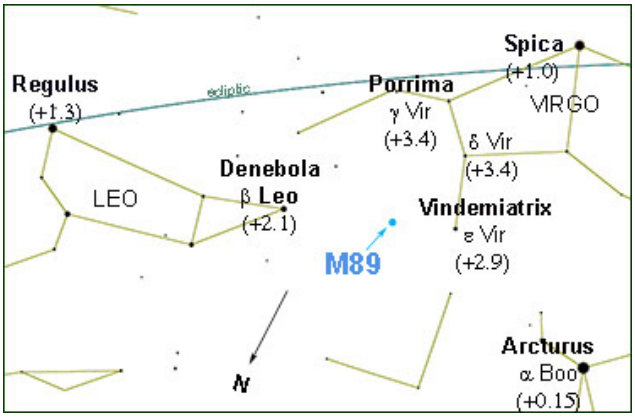
*9th May 2021 at 21h00

Discovery

By Charles Messier in 1781.

Description

Messier 89 (also known as NGC 4552) is an elliptical galaxy in the constellation Virgo in the core of the Coma-Virgo Supercluster.



This is a beautiful example of an elliptical galaxy of type E0, appearing very nearly circular. Small instruments show a bright nucleus embedded within a well-concentrated, hazy centre 1minute in diameter fading out to a diffuse periphery. Long exposures show a much larger structure apparently enveloping the galaxy which may be part of the larger Virgo cluster itself instead of being directly related to M89.

Assuming that M 89 is 65 million light years away - the same distance as the Virgo Cluster's centre - then its absolute magnitude is -21.7, a luminosity of 40 billion Suns, with a true diameter of over 64,000 light years. M 89 contains about 250 billion solar masses. Its red shift indicates that it is moving away from us at 210 Km/second.

KPNO 0.9-meter CCD image, April 1995

Compared to the Milky Way's 150-200 globular clusters, M 89 has a far larger population. A 2006 survey estimates that there are about 2,000 globulars within 25 minutes of M 89.

Current observations indicate that M 89 is almost perfectly spherical in shape. This would be unusual as most other known elliptical galaxies are relatively elongated. However, it is possible that M 89 is oriented in such a way that it appears spherical but is in fact elliptical.

While M 89 looks like the prototype of a normal E0 galaxy, it is also known as a weak radio source. The galaxy also features a surrounding structure of gas and dust, extending up to 150,000 light-years in the north-western and southern directions. A jet of heated particles extends 100,000 light-years outward. This may be a smaller galaxy, disrupted by gravitational forces during an encounter with M 89, or an indication that M 89 may have been an active quasar or radio galaxy.

IAN RIDPATH'S STAR TALES

Virgo

The virgin

Genitive: Virginis

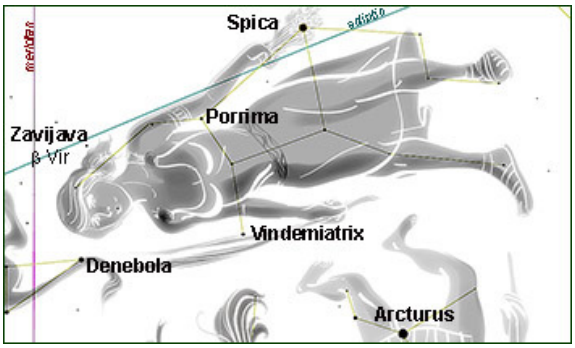
Abbreviation: Vir

Size ranking: 2nd

Origin: One of the 48 Greek constellations listed by Ptolemy in the Almagest

Greek name: Παρθένος (Parthenos)

Virgo is the second-largest constellation in the sky, exceeded only by the much fainter Hydra. She is usually identified as Dike, goddess of justice, who was daughter of Zeus and Themis; but she is also known as Astraeia, daughter of Astraeus (father of the stars) and Eos (goddess of the dawn). Virgo is depicted with wings, reminiscent of an angel, holding an ear of wheat in her left hand (the star Spica).



Dike features as the impartial observer in a moral tale depicting mankind's declining standards. It was a favourite tale of Greek and Roman mythologists, and its themes still sound familiar today.

Dike was supposed to have lived on Earth in the Golden Age of mankind, when Cronus ruled Olympus. It was a time of peace and happiness, a season of perennial spring when food grew without cultivation and humans never grew old. Men lived like the gods, not knowing work, sorrow, crime, or war. Dike moved among them, dispensing wisdom and justice.

Then, when Zeus overthrew his father Cronus on Olympus, the Silver Age began, inferior to the age that had just passed. In the Silver Age, Zeus shortened springtime and introduced the yearly cycle of seasons.

Humans in this age became quarrelsome and ceased to honour the gods. Dike longed for the idyllic days gone by. She assembled the human race and spoke sternly to them for forsaking the ideals of their ancestors. 'Worse is to come', she warned them. Then she spread her wings and took refuge in the mountains, turning her back on mankind. Finally came the Ages of Bronze and Iron, when humans descended into violence, theft, and war. Unable to endure the sins of humanity any longer, Dike abandoned the Earth and flew up to heaven, where she sits to this day next to the constellation of Libra, which some see as the scales of justice.

The ear of corn held by Virgo in her left hand is represented by the first-magnitude star **Alpha Virginis**, known as **Spica**, a Latin name meaning 'ear of grain'. The star's name in Greek, Στάχυς (Stachys), has the same meaning. Spica lies 250 light years away.

The Stars of Virgo

Beta Virginis is called **Zavijava** (the **a**s as in c**a**t, stress the 3rd syllable), from an Arabic name meaning 'the angle'; in the Almagest, Ptolemy located this star on the top of Virgo's left wing. **Gamma Virginis**, also in the left wing, is called **Porrima**, after a Roman goddess. According to Ovid in his Fasti, Porrima and her sister Postverta were the sisters or companions of the prophetess Carmenta. Porrima sang of events in the past, while Postverta sang of what was to come. [*Wikipedia disagrees with this! Ed.*]

Epsilon Virginis, on Virgo's right wing, is named **Vindemiatrix**, from the Latin meaning 'grape-gatherer' or 'vintager', because its first visible rising before the Sun in August marked the beginning of each year's harvest. Ovid in his Fasti tells us that this star commemorates a boy named Ampelus (the Greek word for 'vine') who was loved by Dionysus, god of wine. While picking grapes from a vine that trailed up an elm tree, Ampelus fell from a branch and was killed; Dionysus placed him among the stars. This star's original Greek name, Προτρυγητήρ (Protrygeter), also means 'grape gatherer', the same as in Latin. Its importance as a calendar star is demonstrated by the fact that it was one of the few stars named by Aratus and, at third magnitude, was far fainter than the others.

Virgo, incidentally, contains the autumnal equinox, the point at which the Sun crosses the celestial equator heading south; this occurs on September 22 or 23 each year. In ancient times the autumnal equinox lay in Libra, hence it is still sometimes referred to as 'the first point of Libra'. However, because of the effect of precession, the autumnal equinox crossed the modern constellation boundary from Libra into Virgo around 730 BC. It continues to move, and will eventually reach Leo in AD 2439.

Please keep in touch...

Have a look at our excellent website, edited by Derek Duckitt.
http://www.hermanusastronomy.co.za/

Also...

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