

OBSERVE THE SKY THIS MONTH

SOME SELECTED OBJECTS

NOVEMBER 2024

General sky comments – Daylight Savings Time ended on Sunday November 3. The full Moon this month is the beaver moon. Beaver are preparing their lodges for the winter, storing a food supply, and making a nest for the soon to be born pups. After the club meeting you can watch the gibbous Moon approach and occult 7.8 magnitude Neptune from the Moon dark side edge. On the evening of the 15-16 the full Moon will pass through M45 the Pleiades, occulting many of the brighter stars. On the morning of the 27th as the Sun is rising the 13%-illuminated crescent Moon will occult 1st mag. star, Spica. It will approach from the Earthshine lit side. The two gas planets Jupiter and Saturn are at their best during this time of the year and dominate the sky. Observe the double cluster NGC 869 and NGC 884 in the constellation Perseus this month along with the nearest galaxies M31, its satellite galaxies M32, M110 and adjacent galaxy M33. All you need is your best binocular. The Leonid meteor shower will peak on the night of the 17th and morning of the 18th. Always observe this shower. You never know when it will be spectacular. There will be interference from the waning full Moon

Planets this month –The last quarter Moon is on Sunday the 5th, new Moon (lunation 1248) is on Monday the 13th, first quarter Moon is on Monday the 20th, and full Moon is on Monday the 27th. Mercury returns to the evening sky and is visible all month in the evening twilight at mag -0.5 until reaching greatest elongation on the 16th at 23° east. Venus is putting on the best showing of its 28 year cycle in the southern sky. Mars is approaching the Earth and growing both in brightness and size. Jupiter is in retrograde in Taurus. The Moon passes Jupiter on the 17th at 6° S. Saturn is in retrograde in Aquarius reaching its second stationary point on the 16th. The first quarter Moon passed Saturn on the evening of the 10th. The planet Uranus the only planet based on a Greek name, (Οὐρανός) achieved opposition on the 17th. It is 18.7° N of the equator the farthest it has been north since the 1950's. Neptune is in the evening sky in Pisces and sits well placed for evening viewing. Pluto is still in Sagittarius too close to the sun to observe.

Constellations for the month – At the far southern range of our sky is located the constellations Fornax, the Furnace. Fornax contains many galaxies but they are even less conspicuous than those in Sculptor which we observed last month. Above Fornax is the large constellation Cetus, the Whale. As I noted last month we will concentrate on the east side of this constellation. It is known as a whale in the modern sky but in reality it is the sea monster of Andromeda fame turned to stone by Perseus with the severed head of Medusa. Cetus spans over 3 hours in right ascension but easily seen at this time of the year. Cetus contains mostly galaxies many of them bright including M77. Now is the

time to observe M77 as it is easier to find now than next year when you might want to find it low in the west during a Messier marathon. The hexagonal star pattern including the alpha (α) star Menkar forming the head (tail?) of Cetus makes a convenient star pattern to locate M77. It is found just to the SE of the star gamma (γ) connecting the body of Cetus to the tail pattern. While you were on your way to observe M77 you might have noticed another dimmer galaxy forming a triangle with gamma and M77. This is NGC 1055 an edge-on spiral galaxy with a central bulge. There are two stars one slightly brighter than the other above this galaxy making it look like a winking smiley face or grinning black cat except in some telescopes it is upside down. In the area is a barred spiral NGC 1073. The bar here is much easier to observe and larger than the bar in the Milky Way galaxy. To find it go back to M77 and go slightly over a degree NE 6° SW of gamma (γ) is the variable star Mira, omicron (\omicron). Mira is the featured star this November. Above Cetus is the eastern "fish" of Pisces, the Fishes. The alpha (α) star Alrescha indicates the "knot" between the cords joining the two fish. The western fish is located way back below the square of Pegasus. It is represented by a hexagon of mostly fourth magnitude stars. Pisces also contains one Messier object M74 (noted last month) a face on spiral galaxy found 1° WNW of eta (η) Pisces. To the East of the Eastern fish of Pisces is the constellation Aries, the Golden Ram a Zodiac constellation. See featured constellation below. North of Aries is the constellation of Triangulum, the Triangle. Triangulum is a convenient way to locate the galaxy M33 located 4° WNW of alpha (α) Triangulum. Triangulum in ancient times was a large equilateral triangle but was reduced to the present size by Hevelius. M33 is the third largest galaxy in the local galaxy group. It can be located 3° WNW of alpha (α) Try observing it without any visual aids in a dark sky. M33 can be used as a gauge to judge sky darkness. To observe M33 use a wide field telescope at the lowest power or a large binocular. Above the west fish of Pisces and connected to Pegasus is the constellation Andromeda. Andromeda is best known as the constellation of the Andromeda Galaxy, M31. It is usually found by starting at 2nd mag. Mirach, beta (β) Andromeda and following 3rd mag. mu Andromeda to the galaxy. I employ a simple method by using the eastern three stars of Cassiopeia as an arrowhead shaped pointer to the galaxy 15° away. It points slightly south of the galaxy but the galaxy is sufficiently bright to be easily seen. I will not cover M31 here because there are extensive articles already written about this galaxy, the largest galaxy in our local group. To other galaxies easily found in Andromeda are NGC 278 and NGC 185. NGC 278 is 6° slightly E of N from the center of M32. NGC 185 is 2° NW. The story of Andromeda in Greek mythology (my new section) and related characters can be read below. Above the constellation Andromeda is Cassiopeia easily recognized by most people from its "W" shape. This constellation was extensively covered last month.

Mythology – The mythology of Andromeda starts

with her parents Cepheus, the king of Ethiopia and his vain queen Cassiopeia. Cassiopeia thought she was more beautiful than the Sea Nymphs. As a punishment Poseidon, the god of the sea sent the sea monster Cetus to wreak havoc on the coast of the kingdom. The desperate king Cepheus sought the advice of the oracle Ammon where he is advised to chain his beautiful daughter Andromeda to a rock on the coast as a sacrifice to Cetus. [Nothing is ever said condemning the vanity of Cassiopeia that started the whole mess.] Fortunately the hero Perseus comes by to save the day. Perseus in a previous encounter was tricked into promising to obtain the head of Medusa the only mortal of the Gorgons, monsters of the underworld. Medusa had snakes for hair and could turn any mortal living creature to stone. The goddess Athena had given Perseus a mirror of polished bronze and a cap of invisibility. The god Hermes had given him a sword and winged sandals. Perseus used the mirror to not look at Medusa directly and cut off her head. He put the head into the cap of invisibility and captured the winged horse Pegasus who had appeared from the blood of Medusa mixed with sea foam. Perseus rode off on Pegasus and came by the princess Andromeda chained to the rock with Cetus threatening. He took the head of Medusa out of the cap of invisibility, turned Cetus to stone, rescued Andromeda, and rode off with her. They were married later but that is another story.

Featured star – Mira, Omicron (o) Ceti is the first known long term periodic variable star. Mira a Latin word meaning “The Amazing one.” Some people interpret it as “The Wonderful.” Mira is credited to be discovered by David Fabricius an amateur astronomer and clergyman (1564-1617). He observed the star from August 3, 1596 to August 21, 1596 when it brightened from magnitude 3 to 2. He could not find it plotted on any chart he could locate. It faded in September and disappeared completely in October. He suspected it was a nova but it reappeared in February of 1609. It is very likely Hipparchus and many Chinese and Korean astronomers observed the star and called it a nova. The star was nearly forgotten until being rediscovered in 1638 by Johann Fokkens Holwarda who had determined its period as 11 months (modern value of 332 days). On November 7, 1639 it was observed by Johannes Hevelius and he called it Mira (Historiola Mirae Stellae) in his catalog Prodomus Astronomiae of 1690 along with his atlas of the stars published by his wife Elisabetha after his death in 1687. Mira is a pulsating red giant variable star with a white dwarf companion.

Featured constellation – Back when Aries contained the sun on the spring equinox it had a lot of importance and represented several things for many cultures. For the Egyptians it represented the god Ammon Ra, the god of Fertility and Creative Life and briefly the actual Sun. Most of the time the god was depicted as a man with a ram's head. Aries rescued the children of the king of Thessaly from their cruel stepmother. Later one of the children Phryxus sacrificed the ram and placed its fleece in a sacred grove where it turned to gold. Lat-

er it was sought and found by Jason and his Argonauts. As it contained the Sun the Greeks and Romans called the vernal equinox the “first point of Aries”. This name still persists although precession the sun has moved from Aries to Pisces. From west to East the stars of Aries are called Mesarthim, gamma (γ), Sheratan, beta (β), and Hamal, alpha (α). These stars easily fit in a 10x50 binocular field. Mesarthim is the official name for this star although you will see it spelled Mesarthim (including spell check). It is a pair of equal bluish-white stars resolved at 125x. 2° west of Hamal is gamma (γ) Aries a pair of yellowish-white and pale blue stars resolved at only 75x. The only galaxy worth observing in Aries is NGC 772. It has a bright central area with one side curved and brighter than the other. Look a little over 1° slightly south of east from Mesarthim to find this galaxy.

Other objects of interest – Try this galaxy if you are successful finding NGC 247. NGC 253 is located another 4½° south in Sculptor. In the southern USA this galaxy can be observed easily and is one of the very best galaxies. NGC 1055 a slanted edge on spiral is very interesting in a large telescope and located ½° NW of M77 in Cetus. There are two bright stars one slightly brighter than the other above this galaxy making it look like a winking smiley face or grinning black cat except in reflector telescopes it is upside down. NGC 936 is located 3° SW of delta (δ) Cetus or 1° west and slightly south of 6th mag 75 Cetus. NGC 936 is a barred spiral I noted looked longer than wide but not much else. The European Space Agency (ESO) has posted a photo of this galaxy and it has a strong resemblance to a Star Wars TIE fighter giving this galaxy the name “The Darth Vader Galaxy”. While using the star Mirach, beta (β) And. to find M31, use a power of about 100x to 150x and observe NGC 404 in the same field as Mirach. This irregular galaxy is surprisingly easy to observe. It is round with a brighter center. If you have trouble seeing this galaxy put Mirach just outside your field of view. NGC 404 is also known as “The Ghost of Mirach”.

Dark sky, returns the night that we have lost
Bill Shackelford