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What's Up – September 2015

What's Up – September

Sun and Moon

LAST QUARTER (half moon in the morning sky) falls on 5th at 11:54am. NEW MOON occurs on 13th at 08:41am. FIRST QUARTER (half moon in the evening sky) falls on 21st at 10:59am. FULL MOON is on 28th at 04:51am.

On the 14th at 13:27pm the moon will be at apogee (furthest from Earth) at a distance of 406,464km. On the 28th at 03:46am the moon will be at perigee (closest to Earth) at a distance of about 356,877km.

The total lunar eclipse on 28th is visible from South Africa. The Moon enters the penumbra (the lighter, outside part of Earth's shadow) at 02:11am, and enters the umbra (the dark inner part of Earth's shadow) at 03:07am; and total eclipse starts at 04:47am. The Moon is low in the west in the early morning sky when totality starts.

A partial eclipse of the Sun occurs at sunrise on the morning of 13th. It is already underway before sunrise (Cape Town at 06:49am) with time of maximum at 07:44am when 39% of the Sun is eclipsed by the Moon. It ends at 08:51am. Please do not look at the Sun directly and use a specialized eclipse viewer.

Spring equinox is on 23rd.

Planetary and Other Events – Morning and Evening

Mercury is well placed in the evening twilight for the first half of the month. This apparition is more favorable for observers in the Southern Hemisphere. Mercury is at its greatest elongation east on 3rd-4th.

Venus is now a bright object in the pre-dawn sky, reaching maximum brightness of magnitude -4.8 on the 21st.

Mars is low in the eastern twilight, moving eastward through Cancer (Crab) into Leo (Lion).

Jupiter reappears in the eastern pre-dawn sky in the middle of the month.

Saturn is low in the southwest mid-evening sky, and sets in late evening. It is in Libra (Scales) between the claws of Scorpius.

Uranus rises in mid-evening in Pisces, nearing opposition on October 12.*

Neptune is in opposition on the 1st, visible all night in the constellation Aquarius.*

* Note that Uranus and Neptune are not visible with the naked eye without the assistance of a modest telescope and dark skies.

On 28th the brightest asteroid Vesta will be directly opposite the Sun and visible all night in Cetus. At magnitude 6.2, it will be right at the limit of naked-eye visibility, but easily spotted with binoculars. Cetus appears low in the eastern sky after 8:00, around 10 degrees to the South of the Moon, being overhead around after midnight and in to the morning of 29th.

There are no major meteor showers in September, although the fairly underwhelming September Epsilon Perseid meteors take place between 5th and 21st, peaking on 9th with a zenithal hourly rate of around 5 meteors. This year the moon is rising late in the night in Cancer, giving a reasonable view around midnight in South Africa.

September is the best time of year for viewing the dim glow of the zodiacal light in the pre-dawn eastern sky, the light reflected from millions of interplanetary particles. It lies along the ecliptic. For an example of zodiacal light as seen from SAAO's Sutherland sight in September 2013, see this beautiful NASA APOD photograph: <http://apod.nasa.gov/apod/ap131018.html>

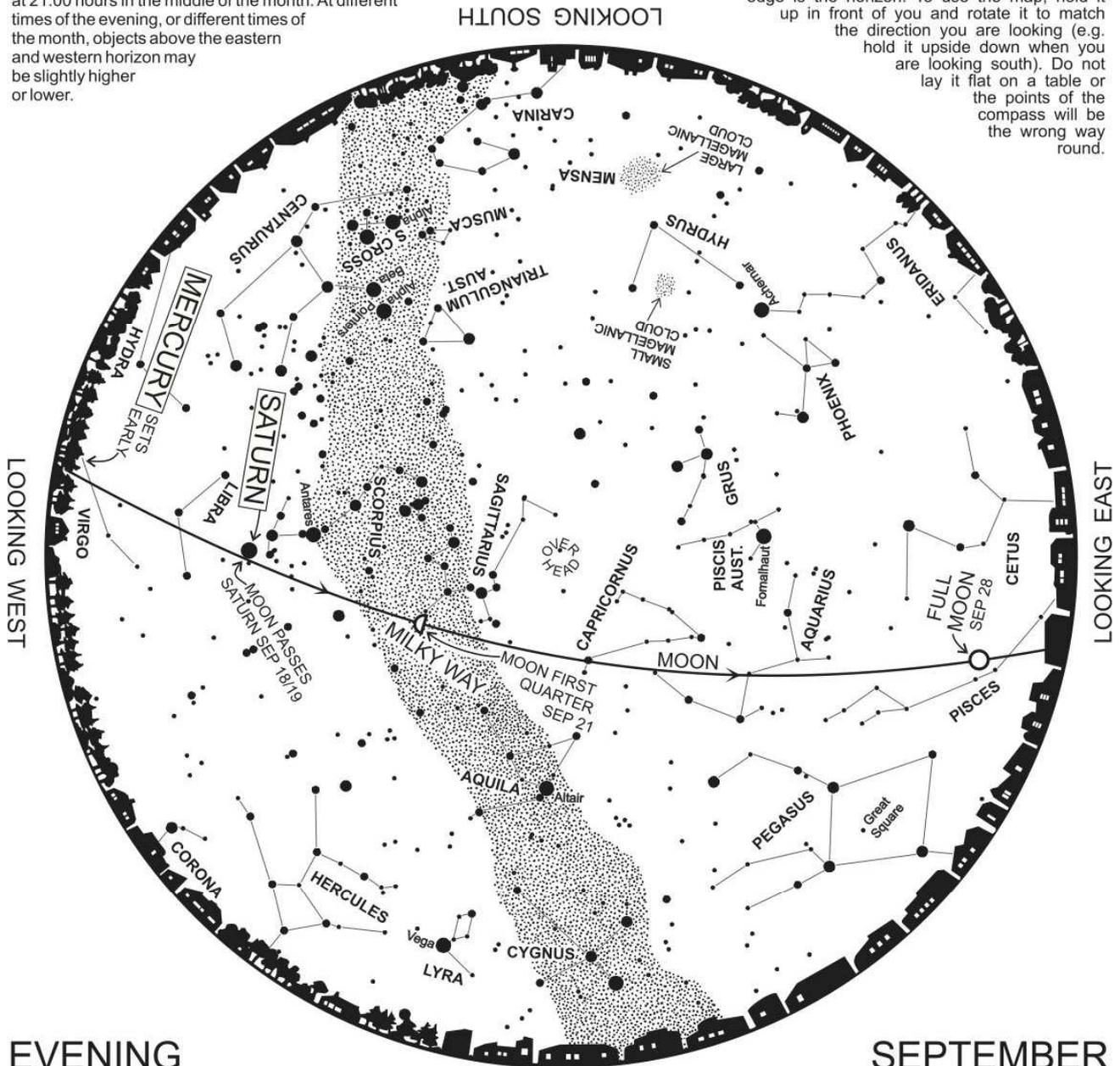
Evening Sky Stars

The bright star Fomalhaut, sometimes called The Loneliest Star, appears high in the east in Piscis Austrinus (Southern Fish) at a distance of 25 light years from Earth. To the north Aquila (Eagle) is easily spotted by finding the bright star, Altair. In the west the red supergiant star Antares, gives away the position of Scorpius (Scorpion) while Sagittarius (Archer) follows overhead. The Southern Cross (Crux) and Pointers (Alpha and Beta Centauri) brighten up the south-western sky.

Dr. Luke Tyas, luke@saao.ac.za 31 August 2015

The map shows the night sky visible above the Cape at 21:00 hours in the middle of the month. At different times of the evening, or different times of the month, objects above the eastern and western horizon may be slightly higher or lower.

The centre of the map is the overhead point, the edge is the horizon. To use the map, hold it up in front of you and rotate it to match the direction you are looking (e.g. hold it upside down when you are looking south). Do not lay it flat on a table or the points of the compass will be the wrong way round.



EVENING SKY

SEPTEMBER 2015

The bright star Fomalhaut, sometimes called The Loneliest Star, appears high in the east in Piscis Austrinus (Southern Fish) at a distance of 25 light years from Earth. To the north Aquila (Eagle) is easily spotted by finding the bright star, Altair. In the west the red supergiant star Antares, gives away the position of Scorpius (Scorpion) while Sagittarius (Archer) follows overhead. The Southern Cross (Crux) and Pointers (Alpha and Beta Centauri) brighten up the south-western sky. Planet Saturn is in Libra (Scales) to the west, almost between the claws of the Scorpion. The Moon is in the evening sky from 15 September until 29 September.

The total lunar eclipse on 28 September is visible from Cape Town. The Moon enters the penumbra (the lighter, outside part of Earth's shadow) at 2:11:47; it enters the umbra (the dark inner part of Earth's shadow) at 3:07:11; and total eclipse starts at 4:47:08. The Moon is low in the west in the early morning sky when totality starts. A partial eclipse of the Sun occurs at sunrise on the morning of 13 September. It is already underway at sunrise (Cape Town at 6:49) with time of maximum at 7:44 when 39% of the Sun is eclipsed by the Moon. It ends at 8:51. Spring equinox is on 23 September.

This map is given to those who attend the shows on Saturday at 13:00, Sunday at 13:00 and Tuesday at 20:00. It is copyright to the Planetarium.