



# THROUGH THE LOOKING GLASS

ISSUE 5 • OCT 21

## FROM THE EDITOR'S DESK:

October brings festive cheer. However, our newsletter this month is a mixed bag -of the good, the bad, and the ugly. Let's begin with the good- a celebration by the world community to mark the eradication of polio in most countries of the world. October brings yet another celebration- The World Space Week. This year the world recognizes and celebrates the achievement of women in Space Science. Haven't we come a long way from a time when women scientists were almost never seen, heard, or recognized?

This month as we observe World Polio Day and World Cotton Day we bring to your attention the contributions of two women scientists whom you have probably never heard or read about- Dr. Leone Farrel and Dr. Ruth Rogan Benerito.

'Through the Looking Glass,' brings you yet another fascinating story- the story of cotton. 7th October marks World Cotton Day. Cotton is not as humble as it seems. It has a murky and a beautiful story to tell. From fuelling slave trade to the Industrial Revolution in Britain, cotton has seen it all.

October brings yet another important event. 21st to 30th October is observed as Global Media and Information Literacy Week. The COVID pandemic has brought with it, an exponential rise in disinformation and has increased the influence of digital platforms. The newsletter examines how, in the current ecosystem of contradictory and complex messaging global media can be used for public good.

The October sky is fascinating. As the monsoon clouds withdraw you can watch some spectacular sky events which are visible to the unaided eye.

Happy reading and Happy Navarathri!

## THIS ISSUE:

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October 7: World Cotton Day

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October 24: World Polio Day

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October 24-31 : Global Media and Information Literacy Week

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October 9th and 14th: Venus and Moon appear close together in the sky



## **WORLD COTTON DAY 2021: “THERE’S MORE TO COTTON THAN YOU THINK”**

On October 7<sup>th</sup> 2019, the World Trade Organization (WTO) hosted the World Cotton Day, which was initiated by the four Cotton countries of Benin, Burkina Faso, Chad, and Mali. The WTO Secretariat, in partnership with the Secretariats of the United Nations Food and Agriculture Organization (FAO), the United Nations Conference on Trade and Development (UNCTAD), and the International Cotton Advisory Committee (ICAC) hosted the event.

At the WTO, cotton is the only commodity that is discussed separately. The United Nations General Assembly's resolution on 30th August officially designated 7th October as World Cotton Day. Cotton is a global commodity that is farmed and traded in over 75 nations on five continents. In the least-developed countries, it plays a critical role in employment creation and economic stability.

The initiative aims to make international trade in cotton fairer and to shed light on the linkages between cotton trade and development. It also enables least developed countries to benefit at every stage of the cotton value chain.

## WHY COTTON?

**Social Impact:** A single tonne of cotton provides year round employment for five people, mostly in some of the most impoverished regions.

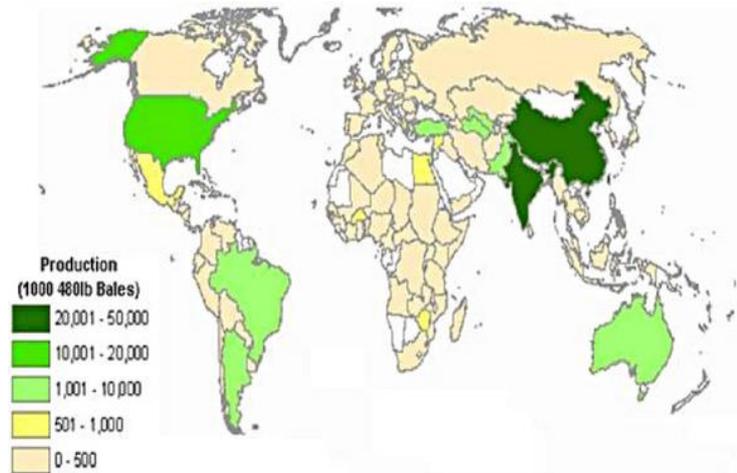
**Water Usage:** Cotton is a drought-resistant crop, with a deep root system ideal for arid climates. Seasonal rainfall at critical points in the plant's growth is sufficient to produce a high yield.

**Land Usage:** Cotton occupies just 2.1% of the world's arable land, yet it meets 27% of the world's textile needs.

**Innovation:** Cotton based filaments are appealing to 3D printers because they conduct heat well; become stringer when wet; and are more scalable than materials like wood pulp

**Fibre, food and feed:** In addition to its fibre being used in textiles and apparel, food products can be derived from cotton seeds, such as edible oil and animal feed

## GLOBAL COTTON MAP



Global cotton map (Source PSD Online <http://www.fas.usda.gov/psdonline>).



[https://www.wto.org/english/tratop\\_e/agric\\_e/cotton\\_e.htm](https://www.wto.org/english/tratop_e/agric_e/cotton_e.htm)

## A GLOBAL COMMODITY

USD 18 BILLION  
of Annual Trade

USD 50 BILLION  
of Annual Revenue

26 MILLION  
Growers



Produced in  
75 COUNTRIES

Across  
5 CONTINENTS

Benefiting over  
100 MILLION families

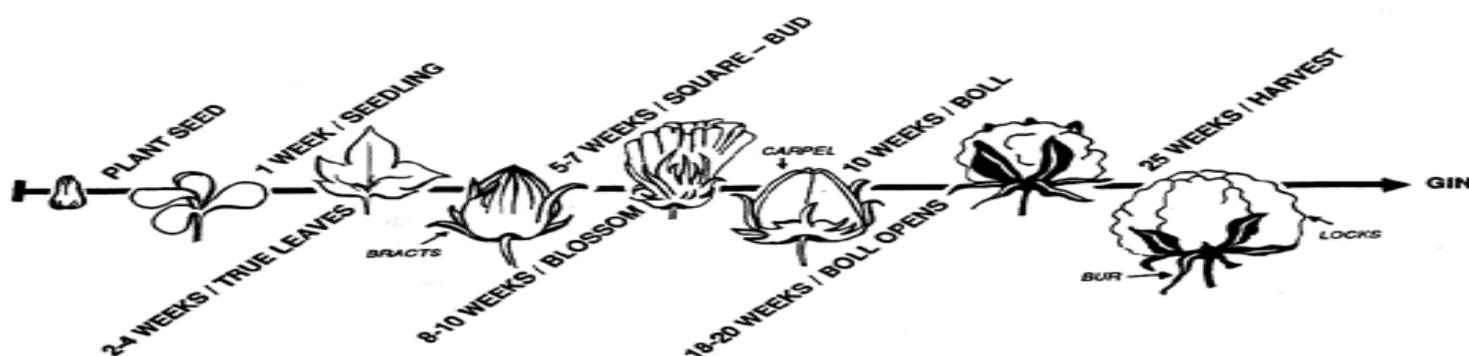
Source: FAO and ICAC (2018)

## COTTON:

- Cotton is a plant-based fibre.
- The cotton plant is a leafy, green shrub related to the hibiscus species of plants, and it's both a food and fibre crop.
- There are up to 52 species of cotton in the genus *Gossypium*.
- *Gossypium hirsutum* was developed by the Mayan civilisation in Mexico and is the most commercially produced cotton species.
- Cotton is farmed between 45 and 35 degrees north and south of the equator
- It is the world's most widely produced natural fibre, accounting for around 31% of the global textile market.
- Cotton grows in warm climates and most of the world's cotton is grown in the U.S., Uzbekistan, the People's Republic of China and India.
- Other leading cotton-growing countries are Brazil, Pakistan and Turkey.

## COTTON CULTIVATION:

- Cotton is commercially cultivated as an annual shrub. It grows to a height of about 1.2 metres. It has three to five lobes and large, heart-shaped leaves with coarse veins. The plant has several branches and a single central stalk. The taproot of the cotton plant can reach a depth of 1.5 metres.
- Flower buds form a few weeks after the plant begins to grow, followed by flowers a few weeks later. After pollination, the flowers disappear, leaving a developing seed pod that matures into the cotton boll (fruit).
- The plant also produces seeds that are contained in small capsules surrounded by fibre in the cotton bolls.



## **COTTON CULTIVATION:**

- Each cotton boll typically contains 27-45 seeds, with 10,000 – 20,000 tiny threads of 28mm in length linked to each seed.
- Cotton fibre is made of cellulose and is thin and hollow like a straw, with a thin wax coating.
- When the crop is fully grown, it is picked and ginned. Ginning separates the cotton fibre (or lint) from the seed.
- Cotton lint accounts for around 42% of the weight of plucked cotton and accounts for roughly 85% of the overall profits from a cotton crop. Cotton seeds provide the remaining 15% of revenue.

## **COTTON PROCESSING:**

- Cotton is baled and stored in the fields after it is harvested before being transported to the gins.
- Cotton bales are cleaned and fluffed at gins to remove dirt, seeds, and lint from the fibre.
- The raw cotton is compressed and kept after it has passed through the gins and has been completely separated from the seeds, ready to be shipped to textile mills for further manufacture.
- The cotton is cleaned and fluffed before being fed into a carding machine, which cleans it even more and twists the short fibres into a long, untwisted rope ready for spinning and weaving.



## Cotton Products

- The fibres are turned into a wide variety of fabrics from lightweight laces to heavy velveteens, suitable for a great variety of wearing apparel, home furnishings, and industrial uses. Cotton fabrics are extremely durable, washable, comfortable to wear and can be ironed at relatively high temperatures.
- Cotton accepts many dyes. Various finishing techniques have been developed to make cotton resistant to stains, water, and mildew; to boost wrinkling resistance, decreasing or eliminating the need for ironing; and to keep shrinkage in laundry to less than 1%.
- Nonwoven cotton, which is manufactured by fusing or cementing the fibres together, is useful for making disposable items such as towels, polishing cloth, tea bags, tablecloth, bandages, and hospital and other medical uniforms and sheets.

### Do you know?



Ruth Rogan Benerito

Ruth Rogan Benerito was a pioneer in the field of bioproducts and a chemist from the United States. Benerito is credited for salvaging the cotton industry in post-World War II America after developing a wrinkle-free, stain-free, and flame-resistant cotton fabric manufacturing technique.

Benerito also devised a method for extracting fats from seeds for use in intravenous feeding in medical patients. This system served as the basis for the current system. She was awarded the Lemelson-MIT Lifetime Achievement Award for her contributions to the textile industry as well as her dedication to education.

## There's more to cotton than you think

### History of Cotton

- **5500 B.C.** — Archaeologists have found cloth fragments, proof that cotton was being grown in the Indus Valley of India (Pakistan). Natives of Egypt's Nile Valley were making and wearing cotton clothing.
- **800 A.D.** — Arab merchants brought cotton cloth to Europe.
- **1492** — Columbus came to America and found cotton growing in the Bahamian Islands.
- **1500** — Cotton was generally known throughout the world. Later, the Coronado expedition sighted cotton crops grown by American Indians in the early 1500's.
- **1616** — American colonists grew cotton along the James River in Virginia.
- **1793** — A Massachusetts teacher and inventor, Eli Whitney, revolutionized the cotton industry when he invented the laborsaving cotton gin (Which separated the seeds from the cotton quickly and efficiently )
- The **Industrial Revolution** in England and the invention of the cotton gin in the U.S. paved the way for the importance cotton holds in the world today.

### Cotton: Down the Ages

- Cotton was the core ingredient of the world's most important manufacturing business by 1861, and the cotton empire had no equal in terms of sheer numbers employed, output value, or profitability.
- Cotton cultivation and processing employed an estimated 20 million people worldwide in 1862, accounting for one out of every 65 persons alive.
- Around one-fifth of the population in England relied on the industry; one-tenth of all British capital was invested in it, and cotton yarn and fabric accounted for about half of all exports.
- Throughout Europe and the United States, entire regions had come to rely on a consistent supply of cheap cotton.
- The cotton industry also catapulted the United States onto center stage of the world economy.

On the eve of the American Civil War, raw cotton constituted 61 percent of the value of all U.S. products shipped abroad.

In 1861, Great Britain, the global capitalist's flagship, became dangerously reliant on the white gold exported from the American ports. Cotton cultivated in the United States accounted for 77 percent of the 800 million pounds of cotton consumed in the United Kingdom by the late 1850s. It also supplied 90% of the 192 million pounds utilized in France, 60% of the 115 million pounds spun in the Zollverein, and 92% of the 102 million pounds produced in Russia.

America's rapid rise to market supremacy due to its flexible supply of labour, land, and credit, which were all necessary factors in the manufacture of raw cotton. By midcentury, cotton had become central to the prosperity of the Atlantic world.



## Cotton and Slavery

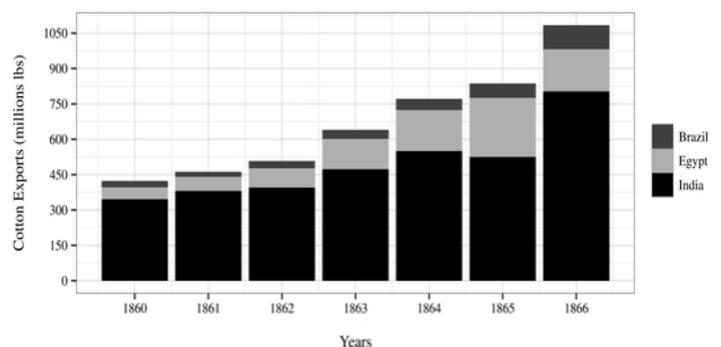
Slavery stood at the center of the most dynamic and far-reaching production system in human history. Herman Merivale, a British colonial bureaucrat, noted that Manchester’s and Liverpool’s “Opulence is as really owing to the toil and suffering of the negro, as if his hands had excavated their docks and fabricated their steam-engines.”

The outbreak of the American Civil War severed in one stroke the global relationships that had underpinned the worldwide web of cotton production and global capitalism since the 1780s. The Cotton Empire was at a crossroads during the Civil War. Four million slaves in the United States—among them the world’s most important cotton growers—gained their freedom during or immediately after the war. Planters realized that the cotton industry depended not only on abundant land and labor, but also on their political power to keep slavery alive and well in the new cotton regions. Slavery's economic and, more importantly, political sustainability depended on its continued territorial expansion.

Cotton merchants knew that the global trade networks they had created could only be safeguarded and maintained by enormous government involvement. Meanwhile, policymakers recognized that these networks had become critical to their countries' social order, and hence a vital source of political legitimacy, wealth, and power.

Lessons learned during the Civil War were soon incorporated into treaties. During the Civil War years, non-slave cotton was grown in Egypt, Brazil, and India, as well as in Union-controlled areas of the American South, to demonstrate what a world with cotton but no slaves would look like.

**Cotton Exports, 1860-1866 (in Millions of Pounds)**



## Cotton: It's role in shaping India

Under the Mughal Empire, Indian cotton production increased. The Mughal reforms favored higher value cash crops such as cotton and indigo. The largest manufacturing industry in the Mughal Empire was cotton textile manufacturing and was responsible for a large part of the empire's international trade. India had a 25% share of the global textile trade in the early 18th century.

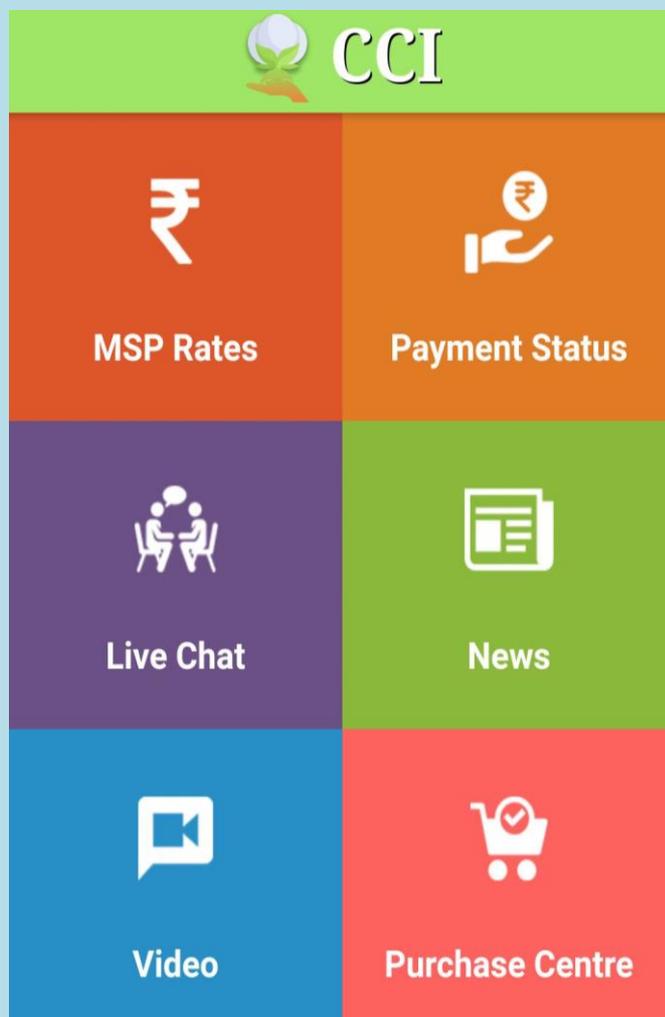
Indian cotton textiles were the most important manufactured goods in world trade in the 18th century, consumed across the world from the Americas to Japan and continued to maintain a competitive advantage up until the 19th century. In order to compete with India, Britain invested in labor saving technical progress, while implementing protectionist policies such as bans and tariffs to restrict Indian imports.

British colonization also forced open the large Indian market to British goods, which could be sold in India without tariffs or duties, compared to local Indian producers who were heavily taxed. Raw cotton was imported from India without tariffs to British factories which manufactured textiles from Indian cotton. India served as both a significant supplier of raw goods to British manufacturers and a large captive market for British manufactured goods. Britain eventually surpassed India as the world's leading cotton textile manufacturer in the 19th century.



## Kasturi Cotton: What is It?

- Cotton is one of India's most important commercial crops, with over 6 million cotton farmers relying on it for a living.
- On the occasion of the second World Cotton Day in 2020, India, the world's second-largest cotton grower, unveiled its own label and logo, "Kasturi Cotton". Brightness, whiteness, softness, shine, purity, and originality will all be represented by the trademark.
- India also developed the "Cott-Ally" smartphone app. The app was created by the Cotton Corporation of India to provide the most up-to-date information on weather conditions, agricultural methods, and crop conditions.
- In the period between 2011 and 2018, India also ran a Cotton Technical Assistance Project (Cotton TAP-I) for 7 African nations, including Benin, Burkina Faso, Mali, and Chad, as well as Uganda, Malawi, and Nigeria.
- The technical support aimed to improve the competitiveness of these nations' cotton, cotton-based textiles and apparel industries through a series of interventions that yielded substantial results, prompting a request for a follow-up project.



# World Polio Day, 24th October

## Why is World Polio Day Observed?

October 24 is observed as World Polio Day every year. It is to remind countries to stay vigilant in their fight against the disease. According to the WHO, since 1980, the cases of wild poliovirus have decreased by over 99.9 per cent as a result of vaccination efforts around the world. World Polio Day was established by Rotary International to commemorate the birth of Jonas Salk, who led the first team to develop the vaccine against the disease.

## The Fight Against Polio

On World Polio Day, the world comes together to celebrate the determination that has brought us 99% of the way to ending polio. In 2020 Africa was declared free of wild polio virus leaving just two countries-Pakistan and Afghanistan where the virus is still endemic. 2020 was also the toughest year that polio eradicators have ever faced. Immunization services took a devastating hit due to the pandemic. An estimated 80 million children under the age of one may have missed the critical vaccine.

## The Afghan Crisis and Polio

The takeover of Afghanistan by the Taliban has led to a humanitarian crisis and an exodus of people out of the country. This poses a health risk as polio is still prevalent in Afghanistan. The movement of people has raised fears of the spread of the wild polio virus in countries where it has been eradicated. As returnees from Afghanistan land in India the Government of India has decided to vaccinate them against polio.



## What is Poliomyelitis?

- Polio is a disabling life threatening disease caused by the polio virus.
- The virus spreads from person to person and can infect a person's spinal cord, causing paralysis.

## Symptoms

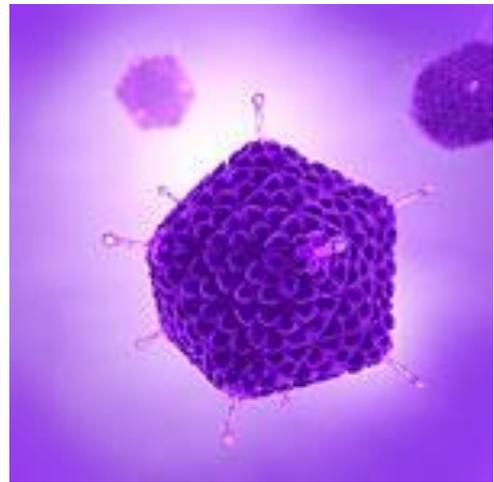
Most people who get infected with poliovirus (about 72 out of 100) will not have any visible symptoms.

**1 out of 4 people** with poliovirus infection **will have flu-like symptoms** that may include:

- Sore throat, fever, tiredness, nausea, headache and stomach pain
- A small proportion of people with poliovirus infection will develop more serious symptoms that affect the brain and spinal cord:

- **Paresthesia** (feeling of pins and needles in the legs)
- **Meningitis** (infection of the covering of the spinal cord and/or brain) occurs in about 1 out of 25 people with poliovirus infection
- **Paralysis** (inability move parts of the body) or weakness in the arms, legs, or both, occurs in about 1 out of 200 people with poliovirus infection. Paralysis is the most severe symptom associated with polio, because it can lead to permanent disability and death. Between 2 and 10 out of 100 people who have paralysis from poliovirus infection die, because the virus affects the muscles that help them breathe.

*Poliovirus is a nonenveloped virus having the shape of an icosahedral capsid (spherical), belonging to the Picornaviridae family.*



## Transmission and Prevention

Poliovirus is very contagious and spreads through person-to-person contact. It lives in an infected person's throat and intestines. Poliovirus infests only human beings. It enters the body through the mouth and spreads through:

- Contact with the faeces (poop) of an infected person.
- Droplets from a sneeze or cough of an infected person (less common).

There are two types of vaccines that can prevent polio:

- Inactivated poliovirus vaccine (IPV) given as an injection on the leg or arm
- Oral poliovirus vaccine (OPV) is still used throughout much of the world.

## How is Polio Treated?

There is no cure for polio. The treatment therefore focuses on increasing comfort, speeding up recovery and preventing complications.

Supportive treatments include:

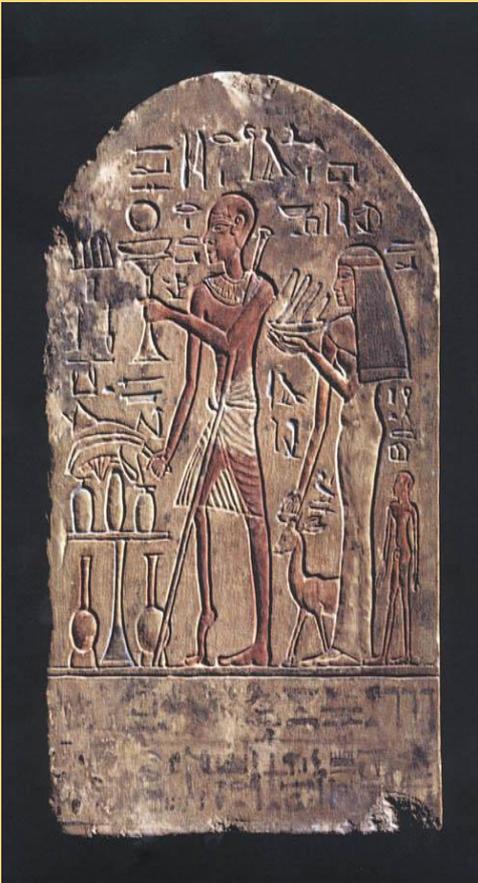
- Pain relievers
- Portable ventilators to assist breathing
- Moderate exercise (physical therapy) to prevent deformity and loss of muscle function



A picture taken in 1942 of a little boy learning to walk with leg braces

## The History of Poliomyelitis

Polio infections have been recorded even during pre historical times as depicted in the Egyptian stele. Polio was an endemic disease until the 1900s. Then major epidemics began to occur in Europe. Soon after, widespread epidemics appeared in the United States. By 1910, frequent epidemics occurred throughout the developed world. These epidemics peaked in 1940s and 1950s, and paralyzed or killed over half a million people worldwide every year.



An Egyptian stele thought to represent a polio victim. (1403–1365 BCE).

## ANTERIOR POLIOMYELITIS! INFANTILE PARALYSIS

“Act of Assembly approved May 14, 1909, provides that anyone violating the provisions of this Act, upon conviction thereof may be sentenced to pay a fine of not less than \$10.00 or more than \$100.00, to be paid to the use of said county, or to be imprisoned in the county jail for a period of not less than ten days or more than thirty days, or both, at the discretion of the court.”

BY ORDER OF THE BOARD OF HEALTH.

\_\_\_\_\_  
Health Officer.

\_\_\_\_\_  
Address.

This cardboard placard was placed on windows of residences where patients were quarantined due to poliomyelitis. Violating the quarantine order or removing the placard was punishable by a fine of up to US\$100 in 1909 (equivalent to \$2,880 in 2020).

## The Salk Vaccine

- Salk believed in the 'killed virus principle' which he had used to develop an influenza virus. He believed that if the vaccine contained only dead virus, then it could not accidentally cause polio in those inoculated. The difficulty of using a killed virus is that large quantities of poliovirus were needed to produce a killed-virus vaccine
- In 1949 John Enders, Thomas Weller, and Frederick Robbins discovered that poliovirus could be grown in laboratory tissue cultures of non-nerve tissue. This paved the way for Salk, as it provided a method of growing the virus without injecting live monkeys.
- Salk developed methods for growing large quantities of the three types of polioviruses on cultures of monkey kidney cells. He then killed the viruses with formaldehyde. When injected into monkeys, the vaccine protected them against paralytic poliomyelitis. In 1952 Salk began testing the vaccine on humans, starting with children who had already been infected with the virus.



Jonas Salk and a nurse administering the vaccine.

*Jonas Salk Polio Vaccine Collection, 1953–2005, UA.90.F89, Archives Service Center, University of Pittsburgh*

## The Sabin Vaccine

- Sabin worked at the University of Cincinnati College of Medicine as a professor of research paediatrics.
- To learn as much as possible about the disease, he and his colleagues performed autopsies on everyone within 400 miles of Cincinnati who had died of polio. These autopsies indicated that poliovirus affected both the intestinal tract and the central nervous system. From this finding Sabin proved that polio first attacked the intestinal tract before moving on to nerve tissue. This discovery suggested that the virus could be grown on non-nerve tissue. Growing poliovirus on non-nerve tissue culture was more practical than Sabin's previous achievement of growing it on brain tissue obtained from embryos.
- Sabin worked on an attenuated live-virus vaccine. Sabin felt that an oral vaccine would be superior to an injection, as it would be easier to administer. He began to grow and test many virus strains in animals and tissue cultures and eventually found three mutant strains of the virus that appeared to stimulate antibody production without causing paralysis. Sabin then tested these strains on himself, his family, research associates, and prisoners.



Albert Sabin demonstrates how the oral vaccine for polio is given to children.

*Hauck Center for the Albert B. Sabin Archives, Henry R. Winkler Center for the History of the Health Professions, University of Cincinnati*

## Who is Dr. Leone Norwood Farrel?

While all of us have heard of Dr. Jonas Salk and Dr. Sabin we know little about Dr. Leone Norwood Farrel. She was a key figure in the successful mass production of the polio vaccine, ensuring that Salk and his team had enough serum to perform the initial polio vaccine trials in 1954. As part of a Canadian team of scientists, Farrel supervised a complex production process known as the “Toronto Method” resulting in about 3,000 litres of poliovirus fluids. The process involved filling 5-litre rectangular bottles with “Medium 199” and a small number of monkey kidney tissue cells, and then gently rocking the fluid on specially designed machines to trigger the production of cells.

Salk understood the enormity of Farrel’s contribution to the vaccine’s success, so he decided to make a trip to Toronto to meet and thank her in person but there was a complication. Salk was to be feted in the dining room of University of Toronto’s School of Hygiene, a place where only men were allowed. Salk was insistent on meeting Farrel and the women on the team, so administrators came up with compromise: *the female scientists could stand at the doorway of the dining room to shake the great man’s hand. Farrel’s answer to this offer, was firm: “No thank you.”*

*Leone Farrel, PhD. Courtesy of Sanofi Pasteur Limited (Connaught Campus) Archives, Toronto, Canada*



## India Defeats Polio

India rolled out the Pulse Polio Immunization Programme on 2nd October 1994, when the country accounted for around 60% of the global polio cases. Within two decades, India received ‘Polio-free certification’ from the World Health Organization.

India was declared polio-free in January 2014, after three years of recording zero cases. This achievement is due to the successful pulse polio campaign in which all children were administered polio drops. The last case due to wild poliovirus in the country was detected on January 13, 2011 at Howrah in West Bengal.

## What Lessons can we Learn from the successful eradication of Polio?

As the world tackles COVID- 19 there are many lessons we can put to use from how we've tackled health crises before — such as polio, and how it has been almost entirely eliminated as a public health threat.

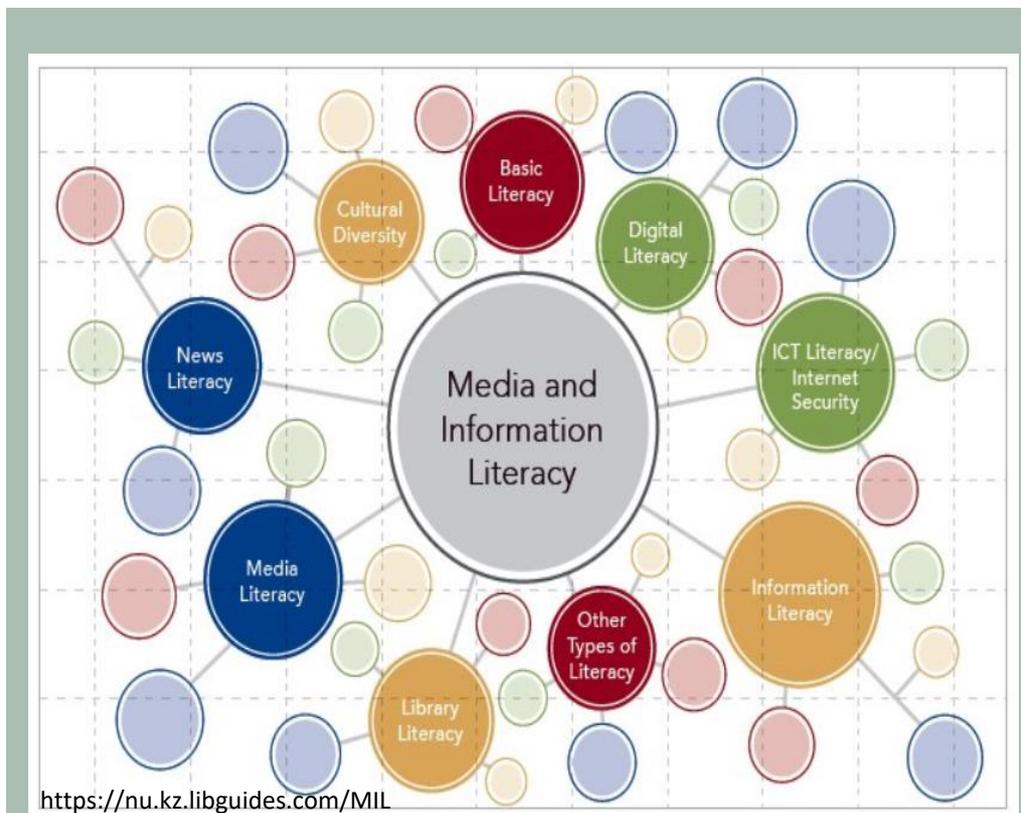
1. **Global Cooperation:** Tackling an unprecedented health crisis such as COVID 19 requires global solidarity. The COVID-19 Solidarity Response Fund is a first-of-its-kind as it allows private individuals, corporations, and institutions anywhere in the world to come together to directly contribute to the global response to COVID-19.
2. **Testing and more Testing:** One of the most important aspects of the fight to eradicate polio was detection. Therefore testing and early detection of COVID-19 must remain a priority, even as the world unites in its efforts towards developing vaccines and treatments.
3. **Funding:** Money is needed to ensure fast, safe, and equitable development of vaccines and treatments. Tests, vaccines, and therapeutics against COVID-19 requires billions, while more funding will be needed to manufacture and distribute enough COVID-19 vaccines to meet the global need rapidly and equitably.



# Media And Information Literacy Week, 24-31 October

## What is media and information literacy (mil) ?

- Information and media literacy means the ability to recognize the data needed to locate, evaluate, effectively use, and communicate information.
- Generally, Information Literacy and Media Literacy are traditionally seen as separate and distinct fields. UNESCO's brought these two fields together as it is needed for life and work today. It includes knowledge, skills and attitude.



MIL considers all forms of media and other information providers such as libraries, archives, museums and Internet irrespective of technologies used.

***“Media and Information Literacy recognizes the primary role of media in everyday lives. It lies at the core of freedom of expression and information- since it empowers citizens to understand the functions of media and other information providers to critically evaluate their content, and to make informed decisions as users and producers of information and media content.”***

***-UNESCO***

## Why Global Media and Information Literacy week?

- The Global Media and Information Literacy (MIL) Week began in 2012. This was led by the UN and in partnership with UNESCO.
- The UN General Assembly decided that 24-31 October would be observed as the Global Media and Information Literacy week to spread awareness about factual, timely, targeted, clear, accessible, multilingual and science-based information and to assess the progress made towards achieving media literacy for all.
- The purpose of observing MIL is to recognize that there is a very large digital divide and data inequalities among different countries and that these inequalities can be addressed by improving people's competencies to pursue, receive and communicate information in the digital platform. In the current system there are a lot of complex and contradictory messages which makes it hard for the public to reflect the good being advanced. Each individual needs to be equipped with media and information literacy competencies to understand the stakes, and to contribute to and benefit from information and communication opportunities.

## Information and Media Literacy In the Digital Age

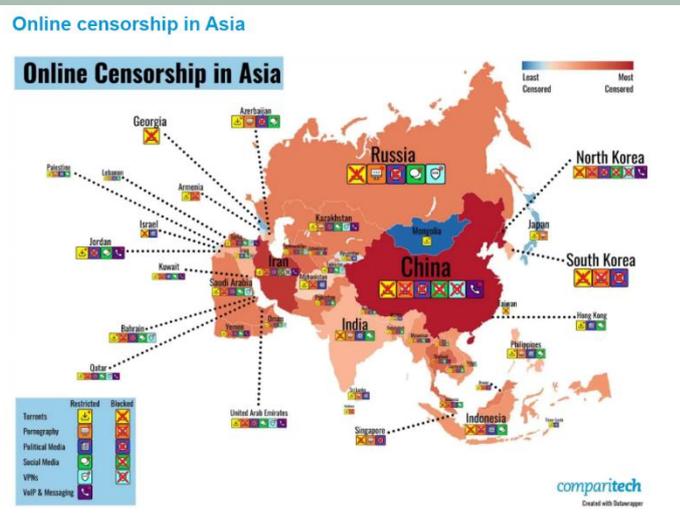
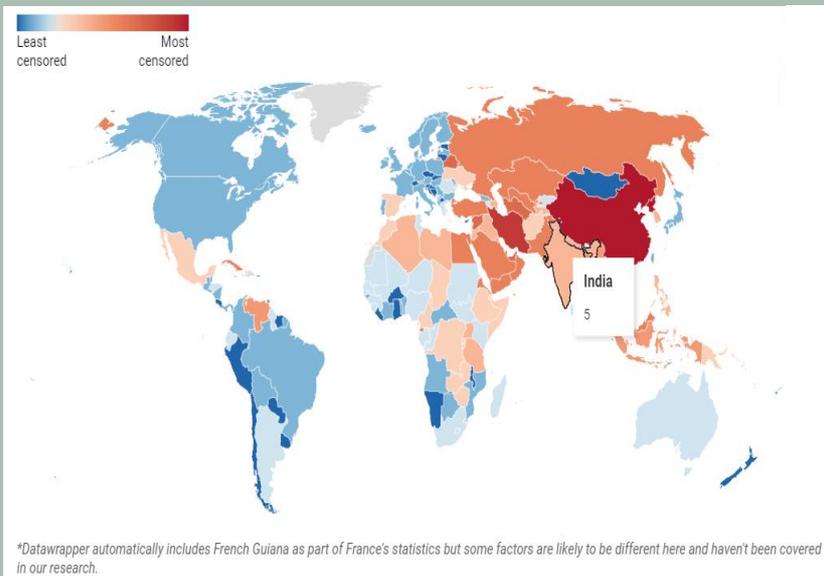
- In this digital age there is more information than ever before. Today individuals must be able to recognize whether the information is true or false and understand how to accurately evaluate, effectively use and clearly communicate information in various formats.
- Digital media connects people in myriad ways. Digital media facilitates interaction across social, economic, cultural, political, religious and ideological boundaries, allowing for enhanced understanding.
- Traditional media focuses on circulating and informing the public, focusing public attention on particular subjects. Digital media helps to amplify these issues

## Example:

- During the Arab Spring of 2011-2012, digital media was used to mobilize resources, organize protests and draw global attention to the corruption and economic stagnation in Libya, Egypt, Yemen, Syria, and Bahrain.
- Through digital media users from around the world collected \$2 million in just two days for victims of the Nepal earthquake of 2015.
- Digital media has also enhanced information sharing across the world by giving people much greater access to facts, figures, statistics, and allowing information to circulate much faster. This not only enables people to respond in real time as events unfold, but also helps to expose political corruption and unfair business practices.
- Digital media also allows people around the world to build communities, organize action and make their voices heard on a multitude of issues. Through online petitions and charities, people across the cybersphere can act on causes about which they care. For example Change.org, has helped many individuals to start petitions and advance their causes. According to its website, it has enabled more than 123 million users to attain their own goals on almost 15,000 issues across 196 countries.
- Digitization of content and data, and new digital communication technologies, like Zoom, Google Meet and others have opened up many opportunities for work to be done remotely. This has changed the nature of studying and employment. During the COVID-19 pandemic many jobs were digitized and could be done from anywhere, at any time, facilitated by the availability of digital data, high speed internet, and better messaging, audio and video technology.
- Before the COVID-19 pandemic, social networking sites like Twitter, Facebook and LinkedIn were not identified as important tools for online workers.

Nearly 60 percent of the world’s population (4.66 billion people) uses the internet. It’s our source of instant information, entertainment, news, and social interactions.

North Korea and China – Users are unable to use western social media (Facebook, Instagram, Twitter), or use VPNs. All of the political news published in the country is heavily censored and influenced by the government. They have shut down messaging apps developed abroad, forcing residents to use ones that have been developed in their own country so that it can be easily controlled by the government. E.g. WeChat in China not only has no form of end-to-end encryption but the app also allows third parties to access messages.



## Dual information challenge

India faced a “dual information challenge” during the pandemic with a sea of misleading and fake information spread amongst the urban population through social media and other applications. In the rural and remote areas, communication varied from region to region with multiple regional languages. This shows that there is a need for wider efforts regarding media literacy amongst the people to empower them to deal with disinformation in a better manner.

- 1 Choose your sources wisely.**  
 Some types of sources are better than others. Search out those that thoroughly review information before publishing it. Try to track down primary or authoritative voices, like scholarly journals or government databases, rather than second-hand reports.
- 2 Proceed with caution.**  
 Be skeptical of superlatives, generalizations, and anything that seems too good to be true. Consider the author's motivation. Does the source have a neutral point of view, or is there an agenda behind the information.
- 3 Trust expertise.**  
 When in doubt about a source, check the author's qualifications. Determine how well he or she knows the subject.
- 4 Expand your search.**  
 Don't settle for a single source if you can find two or more. Look for consensus, but be wary of echo chambers. Cast a wide net. In addition to simple web searches, try databases like Google Books.
- 5 Understand the context.**  
 Few facts exist outside of a broader narrative. Read around the fact to see how it fits into the big picture.

# In the sky this month

The October Sky has a few interesting sights in store.

Venus and Moon appear close together in the sky on the 9th of October, and on October 14th, the Moon appears between the gas giants Jupiter and Saturn. On the very next day (15<sup>th</sup>), the Moon appears right below Jupiter.

The Orionids meteor shower also puts on a show on the 21<sup>st</sup>.

To generate your own sky map, use the values given at the right at the website.

<https://www.fourmilab.ch/cgi-bin/Yoursky>

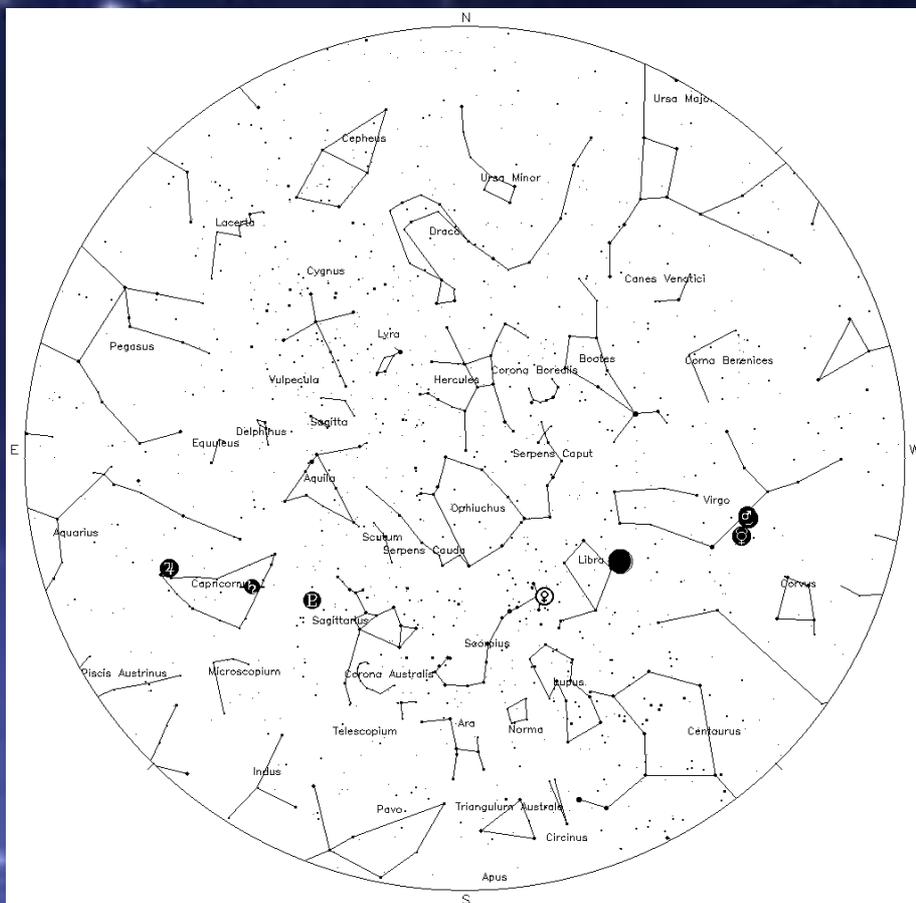
You can change the date, and the time (Subtract 05:30 hours from local time – Here 14:00:00 is the time, when the observing time is 7:30 PM)

|   |   |
|---|---|
| <a href="#">Date and Time</a>               | <input type="radio"/> <a href="#">Now</a><br><input checked="" type="radio"/> <a href="#">Universal time:</a> <input type="text" value="2021-10-09 14:00:00"/><br><input type="radio"/> <a href="#">Julian day:</a> <input type="text" value="2459497.08333"/>  |
| <a href="#">Observing Site</a>              | Latitude: <input type="text" value="12°21'28"/> <input checked="" type="radio"/> North <input type="radio"/> South<br>Longitude: <input type="text" value="76°34'12"/> <input checked="" type="radio"/> East <input type="radio"/> West<br><a href="#">Set for nearby city</a>  |
| <a href="#">Display Options</a>             | <input type="checkbox"/> <a href="#">Ecliptic and equator</a><br><input checked="" type="checkbox"/> <a href="#">Moon and planets</a><br><input type="checkbox"/> <a href="#">Deep sky objects of magnitude</a> <input type="text" value="1.0"/> and brighter<br>Constellations:<br><input checked="" type="checkbox"/> <a href="#">Outlines</a><br><input checked="" type="checkbox"/> <a href="#">Names</a> <input type="checkbox"/> aligned with horizon? <input type="checkbox"/> abbreviate?<br><input type="checkbox"/> <a href="#">Boundaries</a><br>Stars:<br><input type="checkbox"/> <a href="#">Show stars brighter than magnitude</a> <input type="text" value="5.5"/><br><input type="checkbox"/> <a href="#">Names for magnitude</a> <input type="text" value="1.0"/> and brighter<br><input type="checkbox"/> <a href="#">Bayer/Flamsteed codes</a> for mag. <input type="text" value="2.5"/> and brighter<br><input type="checkbox"/> <a href="#">Invert North and South</a><br>Image size: <input type="text" value="1024"/> pixels<br>Font scale: <input type="text" value="0.5"/><br>Colour scheme: <input type="text" value="Black on white background"/> |
| <a href="#">Asteroid and Comet Tracking</a> | Paste <a href="#">orbital elements</a> below: <input type="checkbox"/> Echo elements<br><input type="text"/>  |

## Close approach of the Moon and Venus

- The Moon and Venus will appear to move closer and closer till the 9<sup>th</sup> of October, when they appear “between the pincers” of Scorpius.
- You can see the crescent Moon and Venus close together on subsequent nights also.
- The planets will be visible in the South West.
- You can observe them with your naked eyes, or with binoculars.
- The Moon and Venus can be spotted very easily.

Star map for Mysore (Sky above Excel Public School, Koorgalli) for 9<sup>th</sup> October 2021



Positions in the Sky on 9<sup>th</sup> October 2021



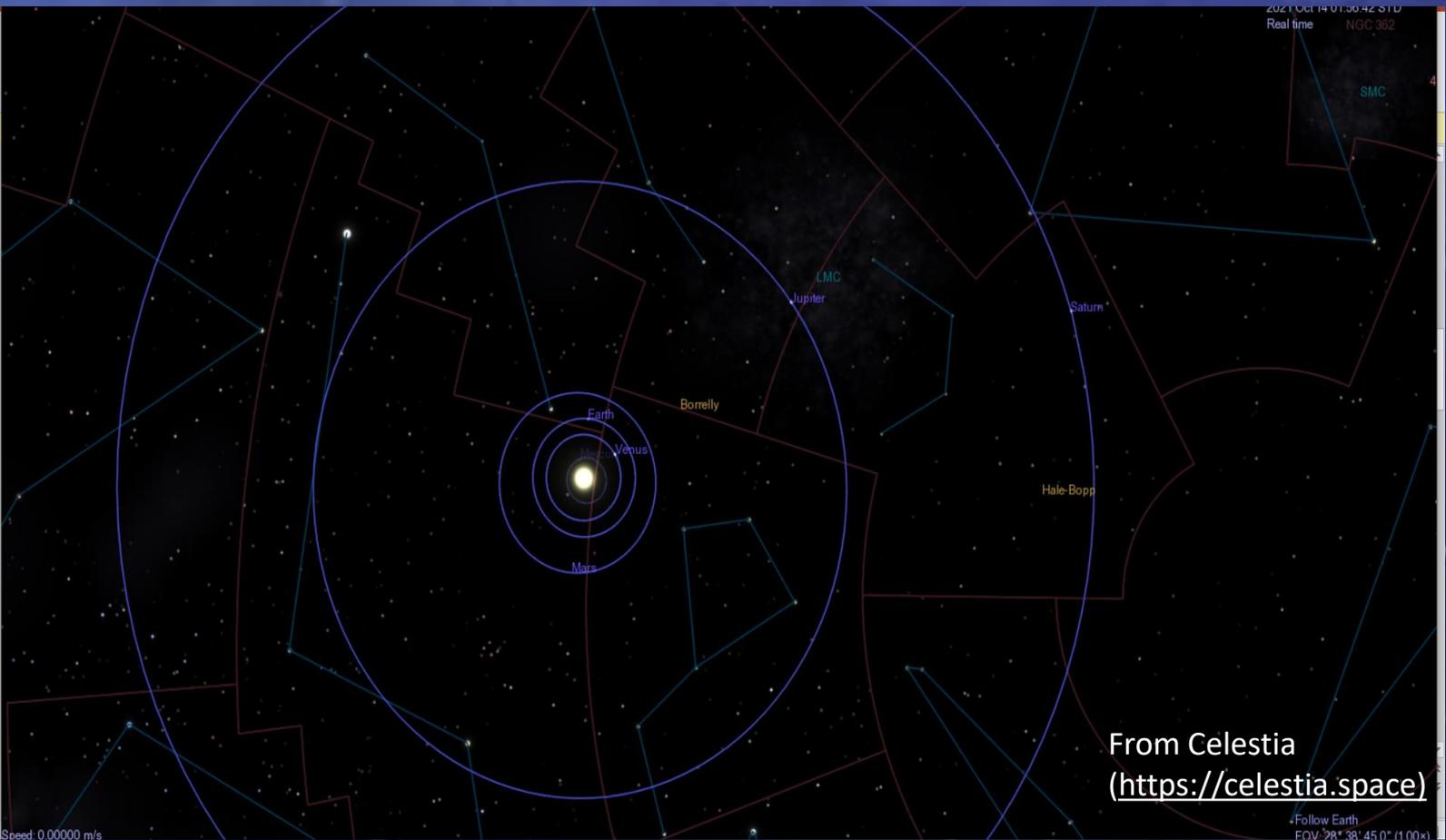
From Stellarium (<https://stellarium.org>)

Earth, Mysore, 757 m FOV 60° 44.5 FPS 2021-10-09 19:30:28 UTC+05:30





Actual positions in the sky on 14<sup>th</sup> October



## The Moon and Jupiter

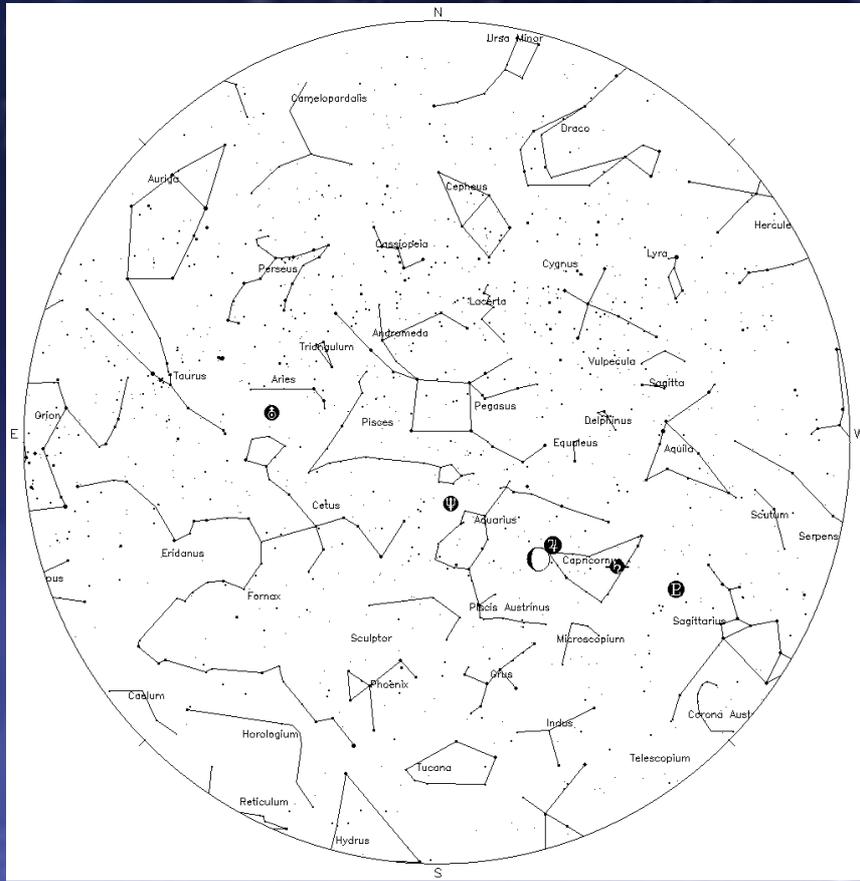
A small shift happens the next day in how Jupiter, Saturn and the Moon appear. Since the Moon is much closer to Earth, the shift in its position is easily visible.

The Moon will be visible directly below Jupiter in the late evening (8:30 PM and later), in the Southwest direction, on October 15th. They will be seen in the constellation Capricorn

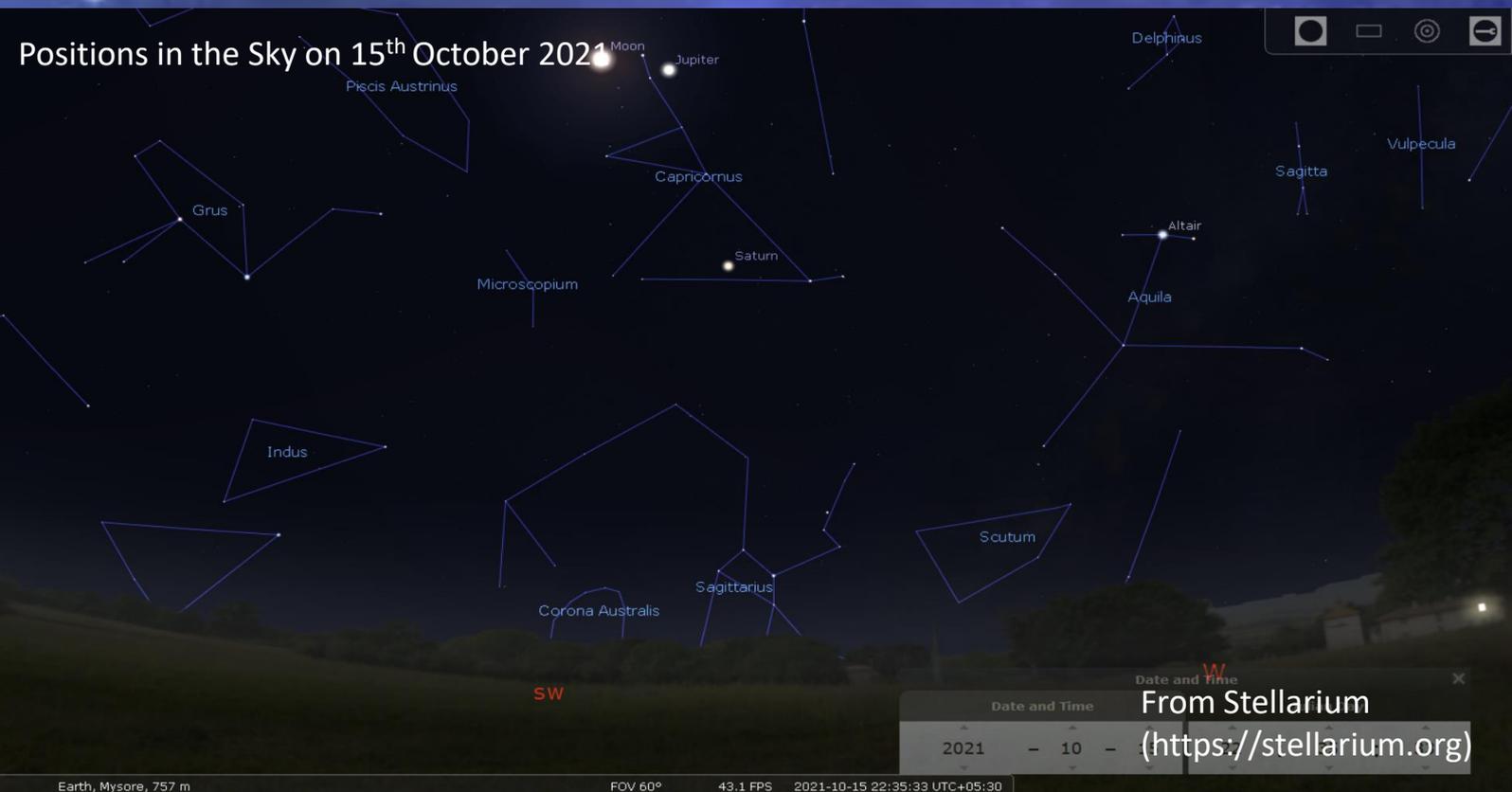
The map shown here shows the positions at 10:30 PM.

The actual positions are not very different from the previous day.

Star map for Mysore (Sky above Excel Public School, Koorgalli) for 14th October 2021



Positions in the Sky on 15<sup>th</sup> October 2021



From Stellarium  
(<https://stellarium.org>)

## 21<sup>st</sup> October: Orionids Meteor Shower

Meteors are the streaks of bright light that are seen when any object falls through the atmosphere. The friction between the object and the atmosphere heats up the object, making it burn in a brilliant streak across the sky.

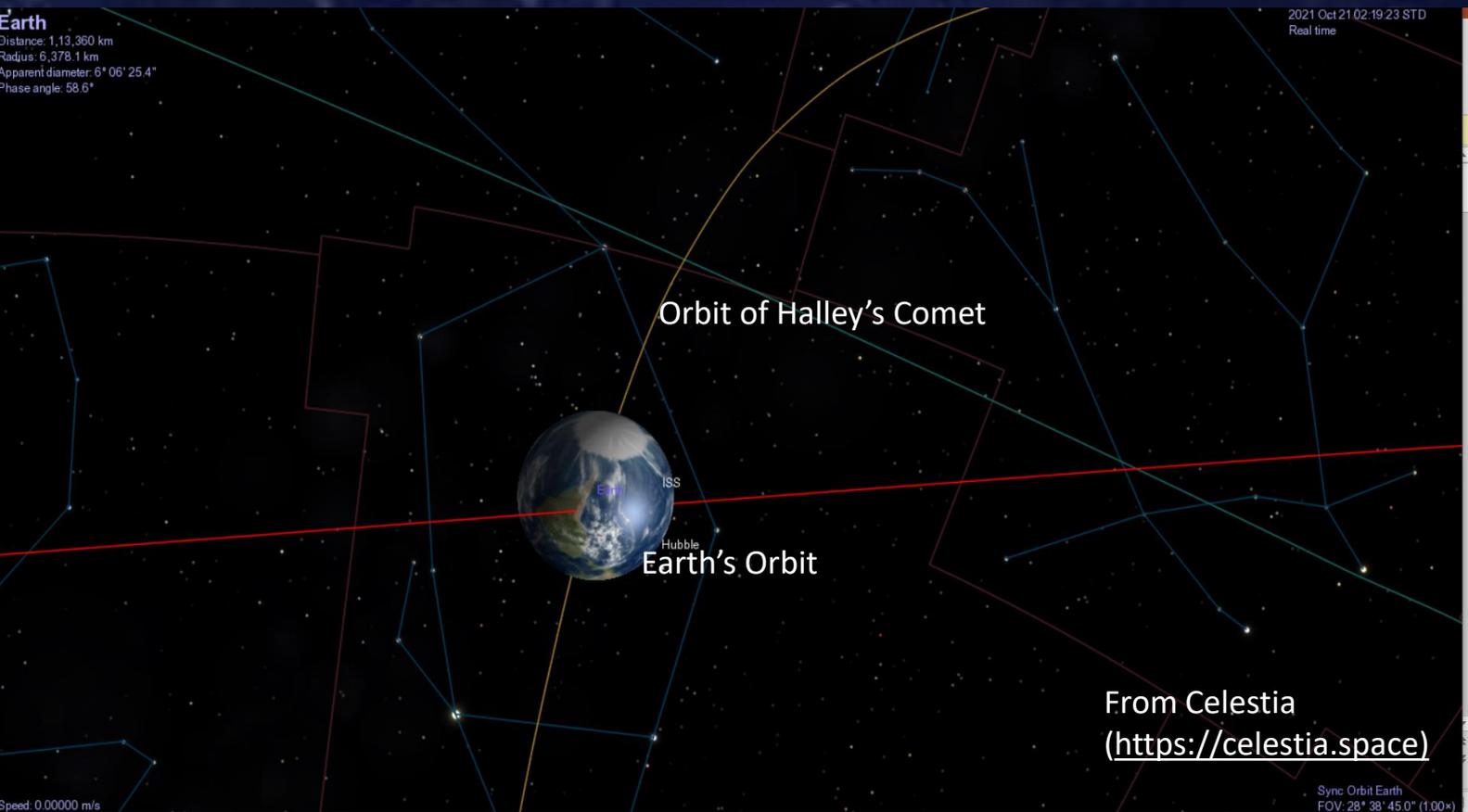
When the Earth passes through the tail of a comet, hundreds of particles from the comet's tail pass through the atmosphere, leading to a shower of meteors.

Meteor showers are named after the constellation in which they appear to originate from.

The Orionids meteor shower originate in the direction of Orion, and are from Halley's comet. Halley's comet was the first comet whose return was predicted by Sir Edmund Halley, proving that comets have periodic orbits. It is visible from the Earth every 76 years. A meteor shower can occur even when the comet is too far from the Earth to be visible.

Meteor showers are very easy to observe. All you need to do is go to your terrace in the early morning (before dawn, around 2:00 to 4:00 AM) and look up. It is best to find a way to lie down and watch the sky.

You can face the East, or look for the three bright stars of the Orion constellation and face it. Even if you do not face that direction, you will be able to see meteors.



Share your thoughts with us.  
We look forward to hearing  
from you.

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