Newsletter
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Nehru Centre
Discovery of India Building
Dr. Annie Besant Road,
Worli, Mumbai - 400 018.
Phone : 2496 4676-80
Fax : 2497 3827
Website: www.nehru-centre.org

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Dear Reader,

As we struggle to limp back to normalcy, the Covid-19 pandemic has again emerged to put a brake on our intentions. The '2nd wave' is much too huge to face with predictions of it peaking by next month. Much as we would love to open our spaces to the public once again, we are forced to keep our doors closed in abundant caution.

We hope that you appreciate that this is not only for the safety of all of us but of all of you as well.

Till then, stay safe and stay indoors.

Chief Executive,
Nehru Centre

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Indian Armed Forces: In Service of the Country

Liberation of Goa

In August 1947 the British left India for good. By September 1948 all but one princely state had been integrated into the Indian union. But three territories of India viz. Goa, on the western coast, Daman, north of Bombay (now Mumbai), and Diu, a small island off the coast of Gujarat, remained under Portuguese rule. Portuguese had landed on the coast of Kerala in 1498 and, after considerable struggle with other European powers, established themselves in Goa and remained there till forcibly evicted in 1961.

It would be pertinent to ask why the country's unification was delayed by fourteen years. A plausible answer would be that independent India propagated a policy of peace and disarmament in settling international disputes in the era of the cold war which had commenced soon after World War II ended. Therefore there was hesitancy in using force and it was hoped, unrealistically though that diplomatic pressure may be able to persuade Portugal to leave India. The former was a member of NATO, a western alliance to fight communism. As such, western countries would not annoy an ally. On the other hand, Soviet Union had nothing to benefit by supporting India on Goa. Under the circumstances, the liberation of Goa depended on India's initiative. The Government of India made several attempts through dialogue to convince the Portuguese government of the aspirations of the people of Goa but in vain. In 1955, over 3000 Goan freedom fighters marched in a procession in Panjim demanding freedom. They were ruthlessly dispersed by the Portuguese authorities and there were heavy casualties. Eventually the Government of India had to resort to military action to drive the Portuguese out of Goa, Daman and Diu.

The military plan was to launch an army division with limited armour and artillery and supported by air power against Goa. The Indian Navy was tasked to carry out a blockade of Goa to prevent any foreign ships from coming in. It was planned to attack the island of Diu, which was fortified, from the creek

contd. on page 2

side. The Indian Navy as also the Air Force were committed along with the army to the task. As no resistance was expected at Daman, it was planned to deploy just a battalion to take over the territory.

Operation Vijay, the code name given to the armed action of the Indian armed forces to annex Goa, Daman and Diu, was launched at the crack of dawn on 18th December 1961 by an air attack which destroyed the vital communications hub of the Portuguese at Bambolim. Indian army's 50 para brigade moved from the north-east and raced towards Panjim with little opposition. Two other brigades, 63 and 48, both infantry simultaneously moved towards Panjim. But for a minor skirmish there was hardly any fighting and by noon time on 19th December, Panjim and Mapuca, two major towns of Goa were captured. The Indian Navy took over the island of Anjadiv the same day and after a short naval battle off the coast of Mormugao harbour the Portuguese warship Afonso de Albuquerque was captured. Thus ended the battle for Goa.

As expected, the battle for Daman was short and swift, but the island of Diu offered stiff resistance. Diu had a fort from where any force approaching the island by crossing the creek could be seen and effectively fired upon. Indian army had to face heavy LMG & MMG fire as it tried to capture a village opposite the fort. The first three assaults by the Indian army were repulsed by the Portuguese. At that stage the Indian Air Force and the Indian Navy stepped in and broke the Portuguese resistance by the evening. By late night of 18th December, Indian Army was in possession of Diu.

Portuguese Warship Afonso de Albuquerque

Operation Vijay was conducted and executed under the overall command of Lieutenant General J. N. Chaudhuri, G.O.C.in C of Southern Command. The field commander of the operation was Major General K. P. Candith. Rear Admiral B. S. Soman commanded the naval ships and Air Vice Marshal Erlic W. Pinto guided the air operations.

Lt. General
J. N. Chaudhuri

Major General
K. P. Candith

Rear Admiral
B. S. Soman

Air Vice Marshal
Erlic W. Pinto

Militarily, Operation Vijay was not a great achievement. It was significant because it removed the last vestige of colonialism from India.

Reference:
1. India's Wars: A military history, 1947-1971 *by* Arjun Subramaniam

What Nehru said....

It has been repeatedly stated on behalf of India that we do not wish to adopt methods of violence in regard to Goa. This is in keeping with our general outlook and policy. Also any attempt at violence might lead to major reactions against us in the world and affect our position in other matters also... Suggestions are sometimes made that some kind of a peace brigade should perform Satyagraha in Goa... The Portuguese are perhaps more insensible than any other country to the idea underlying Satyagraha. They have already shown enough brutality with Indian and Goan satyagrahis or others who opposed them.

.... New Delhi, 4 May 1957,
Shriman Narayan Papers

NEHRU PLANETARIUM

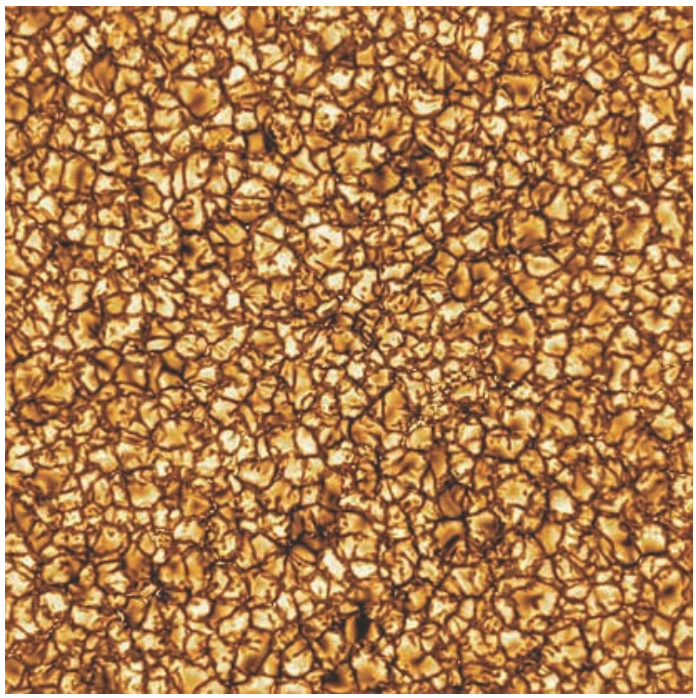
The Sun Explained

The sun, our natural powerhouse is so bright that one cannot look at it directly. But it is possible to look at the sun when it is either rising or setting or when seen as a uniformly illuminated disk of red or crimson colour. This disk is often referred to as the 'solar surface', a term of popular use from the early days of solar studies when astronomers had little or no knowledge of the sun's properties.

The sun is a gaseous body, consisting mainly of hydrogen (about 75 %) and helium (about 24%). The rest comprises of various other elements. The topmost visible region of the sun is appropriately called the photosphere,or a sphere of light. The origin of the word is from two ancient Greek words 'photos' meaning light and 'spheria' meaning sphere.

The thickness of the photosphere is estimated to be about 200 kilometres which is much smaller than the diameter of the sun, which is 13,92,000 kilometres. To give a comparison, if the sun is scaled to the size of a normal apple, then the photosphere will be thinner than the apple's skin. The temperature of the photosphere is approximately 5500 degrees celsius.

When observed under favourable atmospheric conditions, it is seen that the photosphere is covered with small white patches surrounded by dark lines. These patches are called 'granules', which are about 1000 kilometres in size and they last for about 20 minutes as they are transitory phenomena. The process of the formation of granules is very similar to boiling liquid like water,



A small region of the photosphere showing granulation.

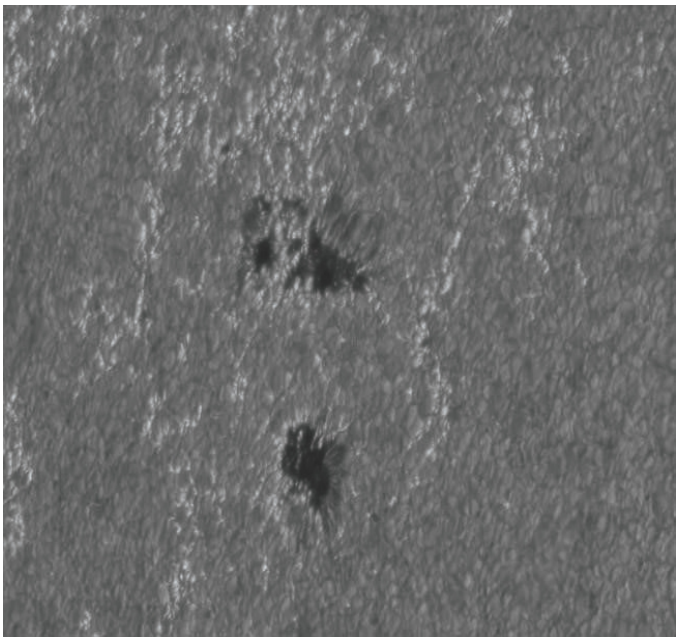
Image credit: Daniel K., Inouye Solar Telescope

oil etc. Hot dense material at the lower region of the photosphere gets heated and rises up. It cools when it reaches the top. The cooler material sinks down to be heated again through a process called 'convection'.

The hot dense material is called 'plasma' and is electrically charged. This plasma moves at a speed of 7 km/sec.

Sometimes many granules come together to form super granules. The size of these super granules can become as large as 30,000 kilometres and can last for nearly 24 hours. This moving electrically

charged material then generates a magnetic field, a process that is similar to the making of an electromagnet.



Granulation, faculae and sunspots

Image credit: NASA

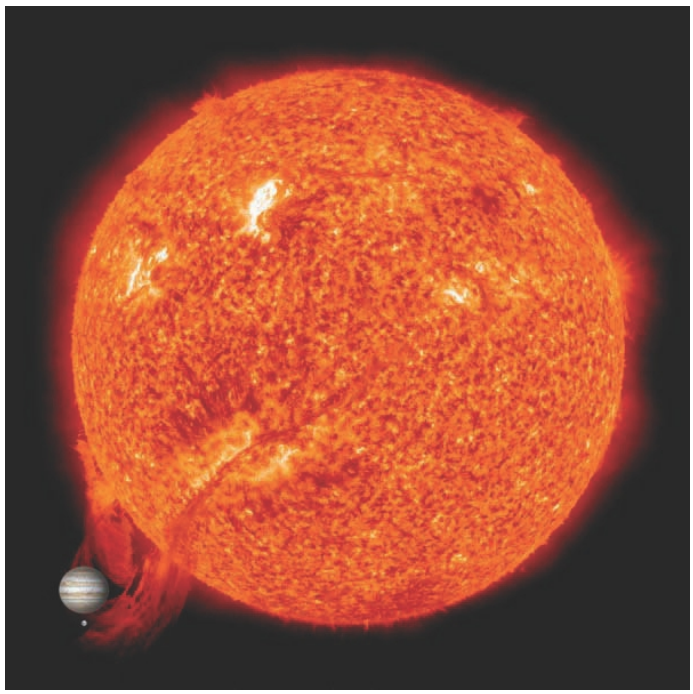
Between the granules, some bright spots are observed. These are called 'faculae'. A 'facula' is Latin for 'little torch' or a 'bright spot'. Like granules, faculae too form and dissipate over several minutes. The temperatures of the faculae are about 100 to 200 degrees higher than that of granules. Faculae are difficult to photograph and are best seen when these are close to the edge of the sun.

On the photosphere, one can also see some dark, cooler regions called 'sunspots'. The sunspots look dark only in comparison with the temperature of the surrounding region. Their temperature is about 3500 degrees, which is about 2000 degrees less than that of the photosphere. The sunspots are not a regular feature of the photosphere. The number of sunspots on the sun increase and decrease every 11 years.

Sometimes an eruption is seen at the limb of the sun. It is called a 'prominence' and consists of plasma making granules. The prominence is so large that it erupts away from the photosphere. But when seen projected on the photosphere it is called a 'filament'. These filaments sometimes rise hundreds of thousands of kilometres above the photosphere.

A prominence is a large, bright, gaseous feature extending outward from the sun's surface, often in a loop shape. Prominences are anchored to the sun's surface in the photosphere and extend outwards into the solar corona. While the corona consists of extremely hot ionized gases, known as plasma, which do not emit much visible light, prominences contain much cooler plasma, similar in composition to that of the chromosphere. The prominence plasma is typically a hundred times more luminous and denser than the coronal plasma.

A prominence forms over timescales of about a day and may persist in the corona for several weeks or months, looping hundreds of thousands of kilometers into space. Some prominences break apart and may then give rise to coronal mass ejections. Scientists are currently researching how and why prominences are formed.



A solar prominence, with images of Jupiter and Earth, superimposed for size comparison.

Image credit: NASA

Folk Dances of India - Assam

Assam is home to a multi-ethnic and vibrant culture which amalgamates to create a synthesis of rich tradition of dance and music. Some popular folk dances in Assam are Bihu, Devdhani, Bagurumba, Bhortal, Jhumur and others.

Bihu Dance: Bihu is the most important festival of Assam and is celebrated to herald the spring season of which the Bihu dance is an integral part. On the evening of Chaitra Sankranti, groups of young and old go door-to-door to greet and wish each other. There are mainly three Bihus in Assam - Bohag Bihu or Rongali Bihu, Kati Bihu or Kongali Bihu and Bhugali Bihu. The Bihu dance is performed both solo and in groups by people of all ages and the dancing style is characterized by brisk steps and rapid hand movement. Dhola and Pepa (made of buffalo horns) are the musical instruments used to perform this dance.

Bagurumba Dance: The most attractive of the dances of Assam is the Bagurumba dance. While performing this dance, the dancers spread a hand woven colourful cloth from both ends between hand and neck, thus creating a beautiful impression of flying butterflies. This dance is performed as a form of relaxation after the hard plantation work of the Bodo people is completed. It is usually performed during Bwaishagu festival of the Bodos in the Bishuba Sankranti i.e. in mid-April.

Jhumur Dance: In the passage of more than a hundred years of their settlement in Assam, the workers in tea plantations have developed a synthesized form of dance called Chah Baganer Jhumur Nach which is performed to the rhythmic accompaniment of the Madal. The costume worn by the Jhumur dancers is different from other traditional costumes. Male members wear long traditional dresses and keep the rhythm with few traditional instruments, generally a drum, hung on the shoulder, a flute and a pair of taal. The women mostly perform the dance holding each other around the waist and moving hands and legs forward and backward synchronously.

Shri Narayan Laxman Sonavadekar came from a traditional family of temple carvers in Maharashtra. He was a brilliant student of sculpture at the Sir J. J. School of Art where he received a first-class-first in the diploma course in 1958. He also underwent training in painting, metal embossing and stone carving to gain a comprehensive and all-round perspective as a sculptor.

After his illustrious academic career, Sonavadekar began practicing as a professional monumental sculptor in Mumbai. In this period, he had to his credit a wide range of works of art throughout India. Some of his well known creations are the bronze statue of Swami Vivekananda at the Vivekananda Rock Memorial in Kanyakumari, the 20ft. statue in bronze of Mahatma Jyotiba Phule at the New Council Hall in Mumbai, the 15ft. equestrian bronze statue of Chhatrapati Shivaji Maharaj in Goa, the 10ft. statue of Mahatma Gandhi at Council Hall in Nagpur and the 13ft. x 12ft. architectural relief depicting the three pioneers of the Marathi stage at the Gadkari Rangayatan in Thane, Mumbai. Besides these public monuments, he worked on commissions for India's top industrial houses namely the Tatas, the Birlas and the Bajaj Group, to name a few.

Chhatrapati Shivaji Maharaj

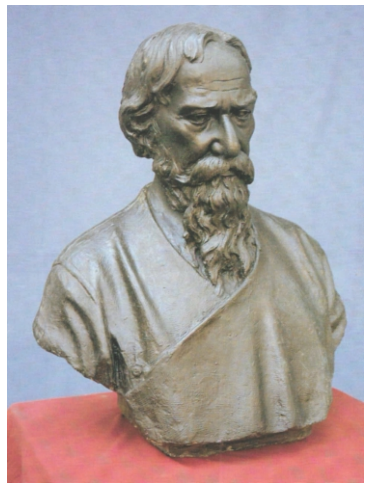
Shri Sonavadekar received several honours in art competitions, most notable being the first prize and a Tamrapatra at the Bombay State Art Exhibition, 1959 and the prestigious Governor's Prize at the Bombay Art Society's Annual Exhibition, 1959.

In 1962, he was appointed as a lecturer in the department of sculpture at the Sir J. J. School of Art. During his tenure at the institution his stature rose to that of one of the eminent teachers in sculpture and continued teaching till 1977.

In 1979, he was invited to execute the bust of His Majesty, the King of Bhutan by the Royal Government of Bhutan. He had been appointed as an honorary member of the State Art Council of Maharashtra by the Government of Maharashtra from 1979-1983 and 1991-95. He continued to practice his profession at his own studio and foundry in Mumbai till his death in 2002.

The Art Gallery had exhibited the works of Sonavadekar as a part of the Indian Masters' Retrospective in 2003-04.

Swami Vivekananda



Gurudev Rabindranath Tagore

UNESCO World Heritage Sites in India

20. Humayun's Tomb

Humayun's Tomb

Humayun's Tomb in Delhi is the first of the grand dynastic mausoleums that were the symbols of Mughal architecture with a style that inspired the construction of the Taj Mahal. Built in 1570, it was the first garden-tomb on the Indian subcontinent. It stands within a complex of 27.04 hectares that includes other contemporary 16th century Mughal garden tombs.

Humayun's Tomb was built in the 1560's on the initiative of his widow Hamida Banu Begum. Persian and Indian craftsmen worked together to build the garden-tomb, far grander than any tomb built before in the Islamic world. It is an example of the *charbagh* (a four quadrant garden with the four rivers of Quranic paradise represented), with pools joined by channels.

The mausoleum stands on a wide terraced platform at a height of about seven metres. The building is made of red sandstone while the tomb itself is made of yellow and black marble. The domes of the central *chhatris* are adorned with glazed ceramic tiles. The middle of each side is deeply recessed by large arched vaults with a series of smaller ones set into the façade.

The interior is a large octagonal chamber with vaulted roof compartments interconnected by galleries or corridors. This octagonal plan is repeated on the second storey. Humayun's garden-tomb is also called the 'dormitory of the Mughals' as in the cells are buried over 150 Mughal family members.

The tomb stands in an extremely significant archaeological setting, centred at the shrine of the 14th century Sufi saint, Hazrat Nizamuddin Auliya.

UNESCO declared the Humayun's Tomb as a world heritage site in 1993.

Inside view

Charbagh Garden

Further reading at Nehru Centre Library:

- The seven cities of Delhi *by* Gordon Risley Hearn; Aryan Books International, New Delhi, 2005. Call No. 915.456/Hea. Barcode - 14014
- Delhi: It's monuments and history *by* Thomas George Percival Spear; Oxford University Press, New Delhi, 1994. Call No. 915.456/Spe. Barcode - 12369

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2.	India's wars: A military history, 1947-1971	**Arjun Subramaniam**
3.	The forest of enchantments	**Chitra Banerjee Divakaruni**
4.	Shades of truth: A journey derailed	**Kapil Sibal**
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Email: editor@nehru-centre.org
Feedback, comments are welcome.

Editor: Arati N. Desai
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