

Newsletter

Vol. 27 Issue 8 AUGUST 2026

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Nehru Centre



Discovery of India Building
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Annual Subscription Rs. 100

Events At a Glance...

Library

World Tiger Day

Join us with celebrated children's author **Ms. Katie Bagli** and enjoy a musical play '**The Tigers of Ranthambore**'.

Saturday, 1st August 2026
10.30 a.m.
Hall of Harmony

Culture Wing

**३४वा मराठी संगीत नाटक
महोत्सव - २०२६
(August 11-14, 2026)**

Tuesday, 11th August 2026
संगीत पद्माराणी

Wednesday, 12th August 2026
संगीत अनंत नारद

Thursday, 13th August 2026
संगीत मत्स्यगंधा

Friday, 14th August 2026
संगीत शांतिब्रह्म

6.00 p.m. (Daily)
Nehru Centre Auditorium

Speeches of the Freedom Movement

20. Sardar Vallabhbhai Patel

India Integrated

New Delhi, 5 July 1947

In the beginning of 1947, there were about 565 Indian states varying in size from a few acres to thousands of square miles. Only about half a dozen of these states were within the territory of proposed Pakistan. The rest were within Indian territory. A few had a common border with India and Pakistan like Kashmir, Jaisalmer, Jodhpur, Bikaner. The integration of all these states with India was a formidable task because some of them aspired to be independent and a couple of them were even toying with the idea of joining Pakistan after the departure of the British.

On 3rd July 1949 Sardar Vallabhbhai Patel, who had taken charge of the Department of States set up exclusively for dealing with the rulers, delivered a speech, extracts of which are reproduced below. Sardar Patel's speech is a fine example of precise and clear thinking. Its friendly tone showing concern for the princes, and the privileges offered to them, convinced many of them, who were still in a dilemma, to accept what was offered by him.

"It was announced some days back that the Government of India had decided to set up a Department to conduct their relations with the States in matters of common concern. This Department has come into being today and the States have been informed to this effect. On this important occasion I have a few words to say to the rulers of Indian States among whom I am happy to count many as my personal friends.

It is the lesson of history that it was owing to her politically-fragmented condition and our inability to make a united stand that India succumbed to successive waves of invaders. Our mutual conflicts and internecine quarrels and jealousies have in the past been the cause of our downfall and our falling victim to foreign domination. We cannot afford to fall into those errors or traps again. We are on the threshold of independence.

It is true that we have not been able to preserve the unity of the country entirely unimpaired in the final stage. To the bitter disappointment and sorrow of many of us, some parts have chosen to go out of India and to set up their own Government. But there can be no question that despite this separation a fundamental homogeneity of culture and sentiment reinforced by the compulsive logic of mutual interests would continue to govern us. Much more would this be the case with that vast majority of States which owing to their geographical contiguity and indissoluble ties - economic, cultural and political - must continue to maintain relations of mutual friendship and cooperation with the rest of India. The safety and preservation of these States as well as of India demand unity and mutual cooperation between its different parts.

When the British established their rule in India, they evolved the doctrine of paramountcy which established the supremacy of British interests. That doctrine has remained undefined to this day, but in its exercise there has undoubtedly been more subordination than co-operation. Outside the field of paramountcy there has been a very wide scope in which relations between British India and the States have been regulated by enlightened mutual interests. Now that British rule is ending, the demand has been made that the States should regain their independence. In so far as paramountcy embodied the submission of States to foreign will, I have every sympathy with this demand, but I do not think it can be their desire to utilise this freedom from domination in a manner which is injurious to the common interests of India or which militates against the ultimate paramountcy of popular interests and welfare or which might result in the abandonment of that mutually useful relationship that has developed between British India and Indian States during the last century. This has been amply demonstrated by the fact that a great majority of Indian States have already come into the Constituent Assembly. To those who have not done so, I appeal that they should join now. The States have already accepted the basic principle that for Defence, Foreign Affairs and Communications they would come into the Indian Union. We ask no more of them than accession on these three subjects in which the common interests of the country are involved. In other matters we would scrupulously respect their autonomous existence.

This country with its institutions is the proud heritage of the people who inhabit it. It is an accident that some live in the States and some in British India, but all alike partake of its culture and character. We are all knit together by bonds of blood and feeling no less than of self-interest. None can segregate us into segments; no



Sardar Vallabhbhai Patel

impassable barriers can be set up between us. I suggest that it is therefore better for us to make laws sitting together as friends than to make treaties as aliens. I invite my friends, the Rulers of States and their people, to the councils of Constituent Assembly in this spirit of friendliness and co-operation in a joint endeavour, inspired by common allegiance to our motherland for the common good of us all.

There appears a great deal of misunderstanding about the attitude of the Congress towards the States. I should like to make it clear that it is not the desire of the Congress to interfere in any manner whatever with the domestic affairs of the States. They are no enemies of the Princely Order, but, on the other hand, wish them and their people all prosperity, contentment and happiness. Nor would it be my policy to conduct the relations of the new Department with the States in any manner which savours of the domination of one over the other; if there would be any domination, it would be that of our mutual interests and welfare. We have no ulterior motive or selfish interests to

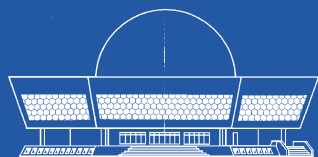
serve. Our common objective should be to understand each other's point of view and come to decisions acceptable to all and in the best interests of the country. With this object, I propose to explore the possibility of associating with the administration of the new Department, a Standing Committee representative of both the States and British India.

We are at a momentous stage in the history of India. By common endeavour we can raise the country to a new greatness while lack of unity will expose us to fresh calamities. I hope the Indian States will bear in mind that the alternative to co-operation in the general interest is anarchy and chaos which will overwhelm great and small in a common ruin if we are unable to act together in the minimum of common tasks. Let not the future generation curse us for having had the opportunity but failed to turn it to our mutual advantage. Instead, let it be our proud privilege to leave a legacy of a mutually beneficial relationship which would raise this sacred land to its proper place amongst the nations of the world and turn it into an abode of peace and prosperity."

What Nehru said....

In India, philosophy, though in its higher reaches confined to the elect, has been more pervasive than elsewhere and has had a strong influence in moulding the national outlook and in developing a certain distinctive attitude of mind.

... from Chapter 5, Through the Ages, The Discovery of India



NEHRU PLANETARIUM

**Tel: 022-40245413
Mobile : 9892890510**

THE MOON MISSION – INDIA'S JOURNEY TO THE MOON

**12 noon (Hindi) 1:30 p.m. (Marathi)
3:00 p.m. (English) 4:30 p.m. (Hindi)**

(MONDAY CLOSED)

Email: managernpmumbai@gmail.com

Astrophysicist Nobel Laureates

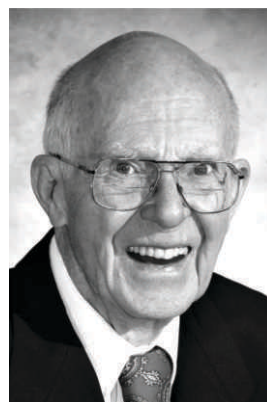
10. Raymond Davis Jr., Masatoshi Koshiba and Riccardo Giacconi: 2002

The 2002 Nobel Prize in Physics was awarded to three astrophysicists. Raymond Davis Jr. and Masatoshi Koshiba shared one half of the prize 'for pioneering contributions to astrophysics, in particular for the detection of cosmic neutrinos', while Riccardo Giacconi received the other half 'for pioneering contributions to astrophysics, which have led to the discovery of cosmic X-ray sources.'

Working independently on opposite sides of the Pacific, Davis and Koshiba made complementary contributions to one of the most significant achievements in modern astrophysics. Davis pioneered the detection of solar neutrinos in the United States through his landmark Homestake experiment*, while Koshiba led the Kamiokande project in Japan, independently confirming the existence of solar neutrinos using a different detection technique. Together, their work laid the foundation for the new field of neutrino astronomy and opened an entirely new window to the Universe.

In this issue, we present the scientific background of the detection of cosmic neutrinos and trace the history of the experiments that led to this breakthrough.

A short biographical note on Raymond Davis Jr. and Masatoshi Koshiba would be carried in the next issues of the Newsletter.



Raymond Davis Jr.



Masatoshi Koshiba

(Photo courtesy: Nobel Foundation archives.)

Cosmic Neutrinos: Background and the Science of Detecting Cosmic Neutrinos

The Sun is the only natural object in our solar system that generates its own energy, making life on Earth possible. Understanding how the Sun produces this enormous amount of energy was one of the greatest scientific challenges of the first half of the twentieth century.

A major breakthrough came from the German-American physicist Hans Bethe, who explained how stars generate energy through nuclear fusion. His theory showed that hydrogen nuclei fuse together inside the Sun to form helium, releasing enormous amounts of energy in the process. This work laid the foundation of our understanding of stellar energy production and earned Bethe the 1967 Nobel Prize in Physics. (See Nehru Centre Newsletter - November 2025).

During the fusion process, four hydrogen nuclei combine to form one helium nucleus. Because the helium nucleus has slightly less mass than the four original hydrogen nuclei, the 'missing' mass is converted into energy according to Einstein's famous equation, $E = mc^2$. Along with energy, the fusion reactions also produce tiny subatomic particles known as neutrinos.

Neutrinos are among the most abundant particles in the universe, yet they are extraordinarily difficult to detect. They have no electric charge and only an extremely small mass. They interact with matter only through the weak nuclear force and gravity, allowing them to pass almost unhindered through planets, stars, and even entire galaxies. Every second, trillions of neutrinos pass through our bodies without leaving any trace.

While the Sun continuously produces solar neutrinos, much more energetic cosmic (or astrophysical) neutrinos are created in some of the universe's most violent environments, including supernova explosions, active galactic nuclei, gamma-ray bursts, and regions surrounding black holes. Since neutrinos travel in straight lines and are neither absorbed by interstellar dust nor deflected by magnetic fields, they carry undisturbed information from their sources. For this reason, they are often called the universe's 'cosmic messengers'. Detecting them allows astronomers to study phenomena that are otherwise hidden from conventional telescopes.

Detecting neutrinos, however, is exceptionally challenging. Since they interact so rarely with matter, scientists construct enormous detectors deep underground, underwater, or beneath thick layers of Antarctic ice to shield them from cosmic rays and other background radiation. On the rare occasion that a neutrino collides with an atom inside one of these detectors, it produces a tiny flash of light or charged particles that sensitive instruments can record.

The first successful attempt to detect solar neutrinos was made by the American physicist Raymond Davis Jr. Beginning in the 1960s, Davis collaborated with the astrophysicist John N. Bahcall, who calculated the number of solar neutrinos that should reach Earth. Davis designed an experiment in the Homestake Gold Mine in South Dakota, about 1.5 kilometres underground.

The detector consisted of a huge tank containing about 380 cubic metres of perchloroethylene, a chlorine-rich liquid commonly used in dry cleaning. Occasionally, a neutrino interacting with a chlorine atom would convert it into a radioactive argon atom. These argon atoms could then be extracted and counted.

Bahcall predicted that roughly 20 argon atoms should be produced each month. However, Davis consistently detected only about one-third of the expected number of neutrinos.



The underground tank where Brookhaven National Laboratory's solar neutrino experiment took place.

Initially, many scientists suspected that either Bahcall's calculation or Davis's experiment was flawed. Yet repeated tests confirmed that both were correct. Davis demonstrated that no argon atoms were being lost during the extraction process. This puzzling disagreement became known as the solar neutrino problem.

At about the same time, Japanese physicist Masatoshi Koshiba was conducting similar experiments at the Kamioka Observatory in Japan. Using the Kamiokande and later Super-Kamiokande detectors, his team independently detected solar neutrinos but found the same shortfall observed by Davis.

The mystery remained unsolved for more than three decades. It was finally resolved around the turn of the twenty-first century through the discovery of 'neutrino oscillations'. Scientists found that neutrinos exist in three types, or flavours—electron, muon, and tau neutrinos. The Sun produces almost exclusively electron neutrinos, but during their journey to Earth these neutrinos can transform into the other two flavours. The Homestake detector was sensitive only to electron neutrinos, and it detected only a fraction of those originally produced in the Sun. This discovery also showed that neutrinos possess a small but non-zero mass, contrary to the assumptions of the original Standard Model of particle physics.

The work of Raymond Davis Jr. and Masatoshi Koshiba established the field of neutrino astronomy, opening an entirely new window to the universe.

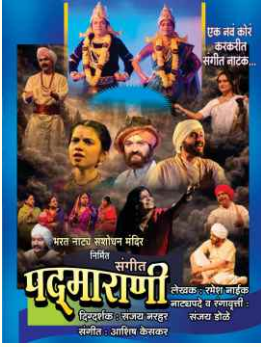
**The Homestake experiment is sometimes referred to as the Davis experiment or Solar Neutrino Experiment and in original literature it was referred to as Brookhaven Solar Neutrino Experiment or Brookhaven (Chlorine) Experiment.*

**Nehru
Centre**
आयोजित

३४वा मराठी संगीत नाटक महोत्सव - २०२६

११ ऑगस्ट ते १४ ऑगस्ट २०२६

संगीत पद्माराणी

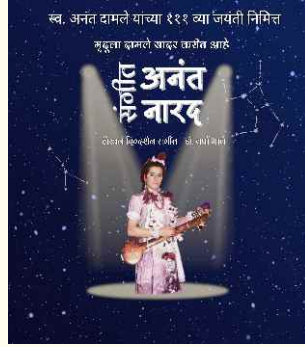


मंगळवार, ११ ऑगस्ट २०२६
सायंकाळी ६.०० वाजता

Produced by:
**Bharat Natya
Sanshodhan Mandir,
Pune**
Written by:
Shri Ramesh Naik
Directed by:
Shri Sanjay Narhar Dole
Music by:
Shri Ashish Kesar
Natyapadee & Rangavrutti:
Shri Sanjay Dole

Duration: 3 hours
with one interval

संगीत अनंत नारद



बुधवार, १२ ऑगस्ट २०२६
सायंकाळी ६.०० वाजता

Produced by:
Smt. Mrudula Damle,
Mumbai
Written & Directed by:
Dr. Varsha Bhavé
Music by:
Dr. Varsha Bhavé

Duration: 2 hours 15 minutes
with interval

संगीत मत्स्यगंधा



गुरुवार, १३ ऑगस्ट २०२६
सायंकाळी ६.०० वाजता

Produced by:
**Shree Parameshwar
Productions**
Presented by:
Kshitij, Sawantwadi
Written by:
**Late Prof. Vasant
Kanetkar**
Music by:
**Late Pt. Jitendra
Abhisheki**
Direction, Set Design by:
Shri Bal Puranik

Duration: 3 hours
with one interval

संगीत शांतिब्रह्म



शुक्रवार, १४ ऑगस्ट २०२६
सायंकाळी ६.०० वाजता

Produced by:
Khalwayan, Ratnagiri
Written by:
Dr. Shrikrishna Joshi
Directed by:
Shri Manohar Joshi
Music & Organ by:
Shri Vijay Ranade

Duration: 3 hours 30 mts.
with two intervals

**Venue: Nehru Centre
Auditorium**

Entry : Free Entrance Cards will be available
on Thursday, 6th August 2026 from
10.30 a.m. until availability from the booking
counter of Nehru Centre Auditorium.

NC Culture Wing
 nehrucentreculturewing
 WhatsApp: 9324857186

UMA KRISHNAMOORTHY

Uma is a student of the Israeli artist Hagit Shahal. She works mainly with oil, acrylics and watercolour. Her favourite mediums are pencil.

**Tuesday 4th August 2026
to Monday 10th August 2026
(AC Gallery)**

EXHIBITION OF WORKS OF STUDY CAMP-MENTORS

An exhibition of paintings in watercolour done by mentors at the study camp organized by the Nehru Centre Art Gallery.

**Tuesday 4th August 2026
to Monday 10th August 2026
(Circular Gallery)**

KALA CONNECT

Kala Connect is a vibrant platform celebrating art, creativity and emerging talent from across India.

**Tuesday 11th August 2026
to Monday 17th August 2026
(AC Gallery)**

SHAKUNTALA RKRISHNAIII



Shakuntala is a Mumbai-based self-taught artist working primarily in acrylic on canvas.

**Tuesday 11th August 2026
to Monday 17th August 2026
(Circular Gallery)**

DIPAYAN GHOSH



Dipayan is a contemporary Indian artist whose works pulse with raw emotion, layered meaning, and fierce aesthetic conviction.

**Tuesday 18th August 2026
to Monday 24th August 2026
(AC Gallery)**

SUDHAN REGE



Sudhan has completed his art education from Bandra School of Art and currently works on freelance basis. His works are watercolour on handmade paper.

**Tuesday 18th August 2026
to Monday 24th August 2026
(Circular Gallery)**

KIRAN CHOPRA

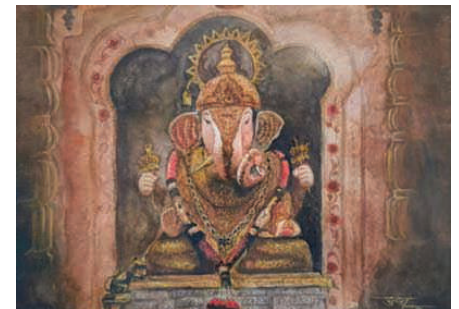
Kiran Chopra is a Mumbai-based artist known for her distinctive approach to abstract, figurative and



landscape painting. With a Master's degree in Arts from S.N.D.T. University, she has developed a unique visual language that often explores the powerful interplay of black and white, creating depth and sculptural dimension on canvas.

**Tuesday 25th August 2026
to Monday 31st August 2026
(AC Gallery)**

SANTOSH DEVE ATUL ACHREKAR SURAJ PATIL MAHENDRA SHENDRE VINOD VICHARE



Suraj Patil

This group of five artists will display their works in various mediums such as graphite /charcoal/ pencils/ watercolour, acrylic and oil colours.

**Tuesday 25th August 2026
to Monday 31st August 2026
(Circular Gallery)**

Our Instagram link:
[nehu_centre_artgallery](https://www.instagram.com/nehu_centre_artgallery)

4. Ramlila, the traditional performance of the Ramayana

Ramlila is a performance of the epic Ramayana in a series of scenes that include song, narration, recital and dialogue. It is performed across northern India during the Dussehra festival. The Ramlila was inscribed on the Representative List of the Intangible Cultural Heritage of Humanity in 2008 under the 'festival' category. The most representative Ramlilas are those of Ayodhya, Ramnagar, Banaras, Vrindavan, Almora, Satna and Madhubani. The staging of the Ramayana is based on the Ramacharitmanas, and is one of the most popular forms of storytelling in the northern part of India. The Ramacharitmanas, a sacred text devoted to the glory of Rama, was composed by Tulsidas in the 16th century.

The Ramlila lasts from ten to twelve days and sometimes even an entire month. Ramlila depicts the battle between Rama and Ravana. Its dramatic force stems from the succession of icons representing the climax of each scene. The play ends with the dramatic burning of Ravana's effigy that symbolizes the triumph of good over evil, light over darkness and righteousness over deceit. The key elements of a Ramlila are its script, dialogue, costumes, makeup, music and choreography. Ramlila is attended by all, irrespective of caste or religion. In the villages, people enjoy participating in the Ramlila and assist in various activities like making masks, costumes, effigies, lights among others.

Ramlila is more than just a performance. It is a socio-religious spectacle which blends devotion, drama and public celebration. It also acts as a tool of education as it transmits the values of Lord Rama such as truth, duty, humility to the younger generations through storytelling. Today, the number of people who come to see the Ramlila has considerably decreased. The lack of interest and enthusiasm among people can be attributed to the development of mass media, particularly television and the OTTs. Therefore, the Ramlila is losing its primary and important role of bringing people and communities together. However, various cultural organizations, NGOs and educators are actively working to revive interest and ensure that it continues. Also, the troupes who perform the Ramlila have adopted digital platforms like Youtube and social media to live-stream the performances.



Lord Rama killing the demon, Raavan



Lord Hanuman and Raavan

Further Reading at the Nehru Centre Library:

- Theatre of the divine by Chandradas Choudhury, The Taj Magazine, Vol.45 No.1, Barcode: J11560

**NEHRU CENTRE
PUBLICATIONS****Books for Sale**

Nehru Revisited
 India's Defence Preparedness
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 in South Asia
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 Mumbai: Past and Present
 India and Central Asia
 Witness to History
 India-Russia Relations
 India-China Relations
 Remembering Einstein
 Challenges to Democracy in India
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Colourful art catalogues for sale

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 - (2) VINAYAKRAO KARMARKAR (1996)
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 - (6) D. G. KULKARNI (DIZI) (2001)
 - (7) NARAYAN L. SONAFADEKAR (2003)
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 - (10) VINAYAK S. MASOJI (2006)
 - (11) K. B. KULKARNI (2007)
 - (12) COLLECTOR'S PRIDE (2007)
 - (13) P. A. DHOND (2008)
 - (14) HAREN DAS (2009)
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 - (17) J. B. DIKSHIT (2014)
 - (18) DEENANATH DALAL (2015)
- and many more

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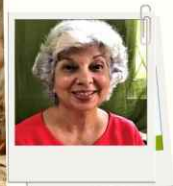


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WORLD TIGER DAY

at the

NEHRU CENTRE LIBRARY



Katie Bagli

**How many tigers does India have? What are the threats they face?
 What actions can we take to save them?**

**To know join us with celebrated children's author Ms. Katie Bagli
 and enjoy**

**a musical play on The Tigers of Ranthambore which will be performed by the
 Group of Club Elves and students of the Universal High School !**

Saturday | 01.08.2026 | 10.30 a.m.

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Editor
 Arati N. Desai
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 Imtiaz Kalu