



LUMINEUX

Annual Newsletter Of The Physics Department
SIXTH EDITION



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OUR MENTORS



Dr. Savita Roy initiated the Physics Department of Daulat Ram College and it is her immense support and guidance that the department has been achieving excellence and will continue to do so. She has inspired all of us by her efforts, discipline and in many noble ways. Her warm and welcoming nature makes her a delightful human, in person. Over the years her dedication, curiosity and love for Physics subject has been remarkable. It is a pleasure to be lead and represented by such an astonishing personality.

Dr. Onkar Mangla is the backbone of the Physics department. His incomparable teaching ability and focus on providing the best resources for his students are unparalleled. His extensive knowledge in the subjects he teaches reflects his passion for teaching as well as learning. He leaves no room for error in his teaching and is a master of his subject.



Dr. Renu Singla is an extremely talented and professional professor. She is highly supportive and kind towards her pupils. Dr. Singla possesses profound knowledge in her field and believes in repeating the topic until everyone in the class understands it. Her adherence to the department is worth its weight in gold. We look forward to upcoming years of cherishing her.

Dr. Omwati Rana makes her lecture interesting by focusing on the concept of the topic and always being ready to address the doubts of the students. With her motivational words, she encourages the students to work hard in the subject and volunteer in various competitions. She gets things done with utmost perfection in every college or departmental event. She is a true inspiration to students molding them into their best version.



Dr. Manoj Giri teaches with nuance and a gentle soul. His approach to complicated topics makes them enjoyable and easy to grasp for novice students. His nuanced teaching ability reflects his wealth of knowledge. He's always conscious of providing the best to his students and helps them independently solve problems with the correct guidance.

Dr. Nisha Bala is a jolly individual, she always has a smile on her face and keeps the classroom environment chill yet very educational. She always reaches out with helping hands to her students. She enthusiastically takes part in department activities and puts immense hard work into her lectures. Her contributions to the subject is exceedingly valuable. We look forward to growing under her sunshine.



Ms. Manisha Meena is a devoted and diligent professor. Her lectures are stimulating and she encourages us to be creative and think about the solutions to the problems ourselves. She is empathetic towards her students and provides an atmosphere where students can freely ask queries and are tutored. Her efforts and commitment to her work and her apprentices are priceless. Yearning to be influenced by noble qualities.

Dr. Shivani Aggarwal is the most dynamic and approachable professor to her students. She uplifts her students' motivation and encourages them to work hard on their careers in this huge competitive world. Her lectures are interactive and highly informative with great examples. She shares her experiences and brings out the desired result from the students.



Dr. Neeru Sehdev is best known for her attention to detail and emphasis on discipline. Her methodical approach to teaching is admirable. She strives to see her students succeed and imbibes her emphasis on diligence and sincerity amongst all of us.

EDITORIAL NOTE



Ria
3rd Year

It is my immense honor to present to you the sixth edition of Lumineux - our annual physics newsletter. We hope to encapsulate the excitement and happenings of this year and preserve the memories we've made together. I am astounded by the unparalleled talent and creativity of my peers every single day and curating their work has cemented this amazement. I have also had the great privilege of working with two brilliant co-editors whose work ethic, skill and precision are inspiring. This year, we feature excerpts on our professors, display some literary talent of the students of Coherence with their articles and poems, as well as their artistic know-how. I sincerely hope you enjoy reading this newsletter as much as we have enjoyed compiling it.

All it takes is a spark to make it luminous.



Anjali Singh
2nd year

I am pleased to update you on the Lumineux (edition 6) news from the Coherence, Department of Physics. The point of Lumineux is to present the events and activities of this year (2022-2023). The creativity and initiative of the students are displayed in many ways from physics articles, contributions of the students and professors, and wonderful paintings to well-placed poems. It is a long established fact that a reader will be distracted by the readable content of a page when looking at its layout. Being a part of the newsletter the second time, I have experienced various new skills including group work, time management, sincerity and research on physics, keeping aside editing and designing. I am grateful to my team for putting together this hopeful and cheerful newsletter. I believe the readers enjoy reading it and drawn to the astounding sketches.



Manya Yadav
1st year

As long as I can recall, I have always desired to study Physics. Coherence, the Physics Association of Daulat Ram College has provided us with many wonderful prospects to enable us to pursue dreams like mine. Lumineux is a written journal of all those opportunities and activities throughout the year. I am fortunate to be a part of the editorial board of such an astonishing newsletter. I personally have always found artistic beauty in the fundamentals of physics, this newsletter holds them both. I would like to add another dimension to the quote, "beauty lies in the eyes of beholder." People have different interpretations of different arts in this world. Reading this journal and finding out your own is the true essence of reading. I hope the receiver of this newsletter will go through it and enjoy its beauty in their own meaning.

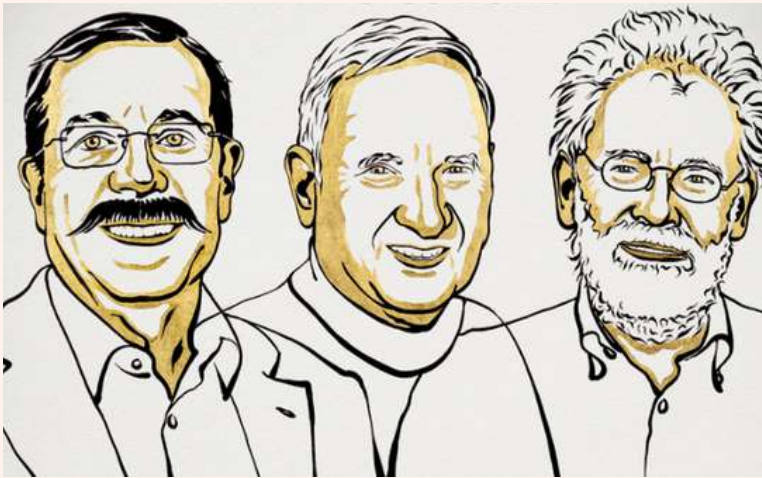


I am humbled by the opportunity to serve as the President of Coherence. It has been a really great journey. From being a shy introverted person to the leader of a department, this position has given me great opportunities to level up not just as an individual but as a team. This journey has surely made me a much more responsible and kind human being for the rest of my life. I've always given my best for the department. I am really grateful to all the fellow union members who have always been so easy to talk to and reach out to and have always been eager to help, because of these people all the events organized were successful. I am also grateful to all the teachers for always being so supportive in all the decisions and providing guidance every time we were stuck.

It was really nice to work with all the bright minds we have in our department and I'll always be thankful to them for choosing me as their leader.

Mansi Rathi (President 2022-2023)

LATEST IN PHYSICS

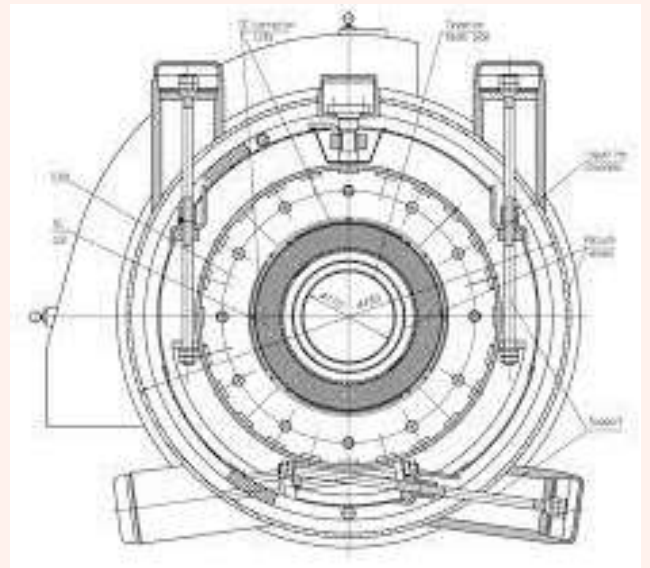


NOBEL PRIZE 2022

The Nobel Prize in Physics 2022 was awarded to Alain Aspect, John F. Clauser, and Anton Zeilinger (from left) “for experiments with entangled photons, establishing the violation of Bell inequalities and pioneering quantum information science”. Their results have cleared the way for new technology based upon quantum information.

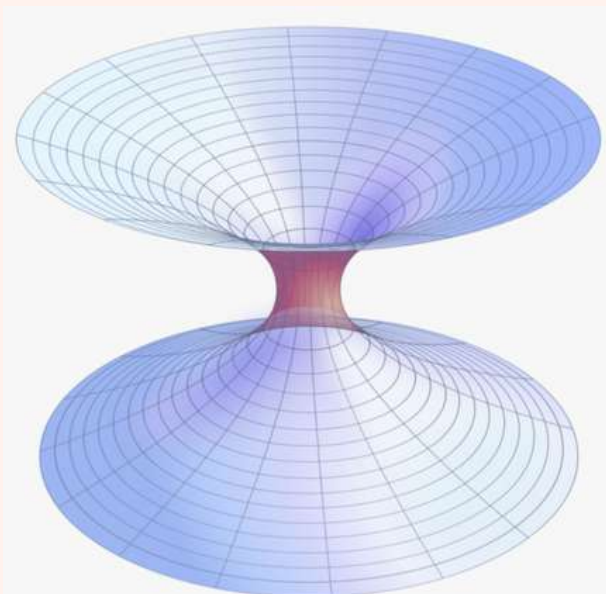
TEVATRON'S NEW LIFE

Despite the Tevatron collider in Illinois having stopped smashing protons a decade ago, researchers continue to analyze the data gathered by the collider's detections of W bosons, which are particles that mediate the weak force. By eliminating sources of error in the data, researchers have measured the mass of the W boson more precisely than ever before and found that it is significantly heavier than predicted by the Standard Model of particle physics.



HOLOGRAPHIC WORMHOLE EXPERIMENT

In November, physicists announced a first-of-its-kind "quantum gravity experiment on a chip." They ran a "wormhole teleportation protocol" on Google's Sycamore quantum computer, manipulating the flow of quantum information in the computer in such a way that it was mathematically equivalent, or dual, to information passing through a wormhole between two points in space-time. The experiment demonstrates holographic duality, a major theoretical discovery of the last 25 years which states that certain quantum systems of particles can be interpreted as a bendy, gravitating space-time continuum



ARTISTA SCRIBE

THE PARADOX OF SCHRÖDINGER'S CAT



Schrödinger's cat is a thought experiment that was proposed by Austrian physicist Erwin Schrödinger in 1935. The experiment was designed to demonstrate the paradoxical nature of quantum mechanics, which deals with the behavior of matter and energy at the atomic and subatomic levels.

In Schrödinger's experiment, a cat is placed in a sealed box along with a vial of poison gas and a radioactive isotope. If the isotope decays, it triggers a mechanism that breaks the vial, releasing the poison gas and killing the cat. However, the decay of the isotope is a quantum event, and until the box is opened, the cat is considered to be in a superposition of states: both alive and dead at the same time.

According to the Copenhagen interpretation of quantum mechanics, the act of observing or measuring a quantum system collapses its wave function, forcing it to adopt a definite state. In the case of Schrödinger's cat, opening the box and observing the cat would collapse its wave function, causing it to become either alive or dead.

The paradox arises from the fact that until the box is opened, the cat is both alive and dead simultaneously, a notion that violates our common-sense understanding of the world. Some interpretations of quantum mechanics, such as the many-worlds interpretation, suggest that all possible outcomes of a quantum event exist simultaneously in different parallel universes.

The experiment is often used to illustrate the concept of superposition, which is a fundamental principle of quantum mechanics. Superposition states that until an observation is made, a quantum system exists in a combination of all possible states. Schrödinger's cat is a vivid and memorable way of demonstrating this principle and the strange and counterintuitive nature of the quantum world.

Saloni Verma

ARTISTA SCRIBE



Simran Singla, 1st year



Aman Verma, 2nd year



Aman Verma, 2nd year

THE PLAY DEFICIT

Anshika Agarwal

Children today are cosseted and pressured in equal measures. Without the freedom to grow, they will never grow up. In the early days, there was hunter-gatherer education in which children and even adolescents were free to play and explore, on their own, in their own chosen ways, “from dawn to dusk.” They played in mixed-age neighbourhood groups almost every day after school, often until dark. They played all weekend and summer long. They had time to explore different possible ways, and also to experience boredom and figure out how to overcome it, to get into trouble and find our way out of it, to daydream, to immerse ourselves in hobbies, and to read comics and whatever else they wanted to read rather than the books assigned to them.

However, in today’s era, children are supposed to spend most of their time in academics by reducing their freedom to play on their own, even when they are not indulged in doing homework and are outside the school premises. They keep them busy with g-

-adgets like video games, mobile phones, and television. They spend an ample amount of time using these gadgets which are only leading to their reduced vision. Adult-directed sports for children began to replace ‘pickup’ games (outdoor games); adult-directed classes out of school began to replace hobbies and parents’ fear led them, even more, to forbid children from going out to play with other kids, away from home, unsupervised. There are a lot of reasons for these changes but the consequence, over the decades, has been a continuous, exponential decline in their opportunities to play and explore in their own chosen ways. Depriving them of playing shows the irrational choices we have made. Among other things, it promotes anxiety, depression, suicide, narcissism, and loss of creativity. It’s time to end this irrationality. Another benefit of playing outside is the development of skills like sportsmanship, leadership qualities, team spirit, self-discipline, sincerity, etc. They tend to use negative emotio-

-ns like anger, jealousy, and greed and use them constructively in self-assertion, and not lash out. Tantrums might work with parents, but they never work with playmates. There is evidence that the young of other species also learn to regulate their anger and aggressiveness through social play. I don’t expect to convince most people, any time soon, that we should abolish schools as we know them today and replace them with centers for self-directed play and exploration. But I do think there is a chance of convincing most people that play outside of school is important. We have already taken too much of that away; we must not take it away anymore.

The reason why play is such a powerful way to impart social skills is that it is voluntary. Players are always free to quit, and if they are unhappy they will quit. So, play teaches social skills without which life would be miserable. But it also teaches how to manage intense, negative emotions such as fear, anger and anxiety.

EMMY NOETHER

The forgotten genius



Amalie Emmy Noether is one of the greatest pioneers of physics we seldom hear about. Her contributions to the field of mathematics were revolutionary thus earning her the title of the most creative abstract algebraist of modern times.

Emmy Noether was born on the 23rd of March 1882 in Erlangen, Germany. By the time she was 17 years old she had already gained proficiency in the French and English languages, earning a teaching certification in both. However, she chose to instead follow in the footsteps of her father, Max Noether in the field of mathematics and studied the subject at the University of Erlangen. She completed her doctorate in 1907 and worked without pay at the Mathematical Institute of Erlangen for seven years. During these times, women were often excluded from academic positions and their contributions were widely ignored by the scientific community. Noether managed to break through these barriers when she was invited to the University of Gottingen despite the protests of the philosophical faculty and lectured under the name of David Hilbert for four years before she was finally recognized in 1919 by the University as a Privatdozent.

Noether's greatest contribution to physics was the eponymous Noether's theorem which states that the symmetries in the universe give rise to conservation laws. This beautiful idea in mathematics is the basis of our understanding of the frameworks of general relativity, quantum physics and particle physics. Noether realised this theorem after she was approached by David Hilbert and Felix Klein with a consequence of Einstein's general theory of relativity which seemed to violate the law of conservation of energy. Her brilliant solution to the problem brought forward the most profound observation in physics, namely, the relation between the various symmetries of the universe and the conservation of the quantities of such symmetries.

In January of 1933, the German Student Association created an anti-Semitic environment in her University and began removing Jewish professors from their positions as educators, under the laws of the Nazi government. Noether was removed from her position as a result of these tyrannical laws and was forced to move to the United States to Bryn Mawr college where she worked for the last two years of her life before succumbing to complications from a surgery.

Emmy Noether was called the "most significant creative genius" by Einstein. In her short life, she contributed some of the most profound and revelatory ideas to the fields of physics and mathematics. Having overcome the challenges of sexism and anti-Semitism in academia, she is an inspirational figure to all scientists, especially women and the omission of her genius serves as a reminder of the women in science who haven't been awarded the recognition they deserve for their work. We owe it to all the women geniuses who lived before and shall come after, to work hard towards inclusion so that no other Emmy Noether is ever forgotten.

Ria Vasdev

ARTISTA SCRIBE

एक कोमल सी कली का यूं मुस्कुराना
डाल-डाल पर यूं खिल जाना
रोज़ सुबह उसका चहकना
पौधों के साथ महकना
अच्छा लगता है
समय के साथ उसका बदलना
जिम्मेदारियों को समझकर आगे बढ़ना
अच्छा लगता है

नव जीवन के लिए उसका मचलना
निरंतर प्रयत्न करना
अच्छा लगता है

परन्तु आज वह कहीं रुकी है, हॉ-हॉ उस चौंराहे पे, जहाँ मझधार है
जीवन की डोर का या तो यार या पार है
कहीं वह हौसला न हार जाए, सिर्फ़ इस बात का डर है

नहीं-नहीं वह कमज़ोर नहीं
वह अनंत संसार है
चमकना उसकी किस्मत है
परन्तु हॉ तड़पना उसकी ज़रूरत है

अभी वक्त उसके संग नहीं
हालात उसके विपरीत है
हौसला उसका बुलंद
मानलो तो उसकी जीत है
ये मन का खेल है
वह जीत कर दिखलाएगी
तुम सब तो रखो
सपूत वह भी कहलाएगी

- वंदना कुमारी
3rd Year



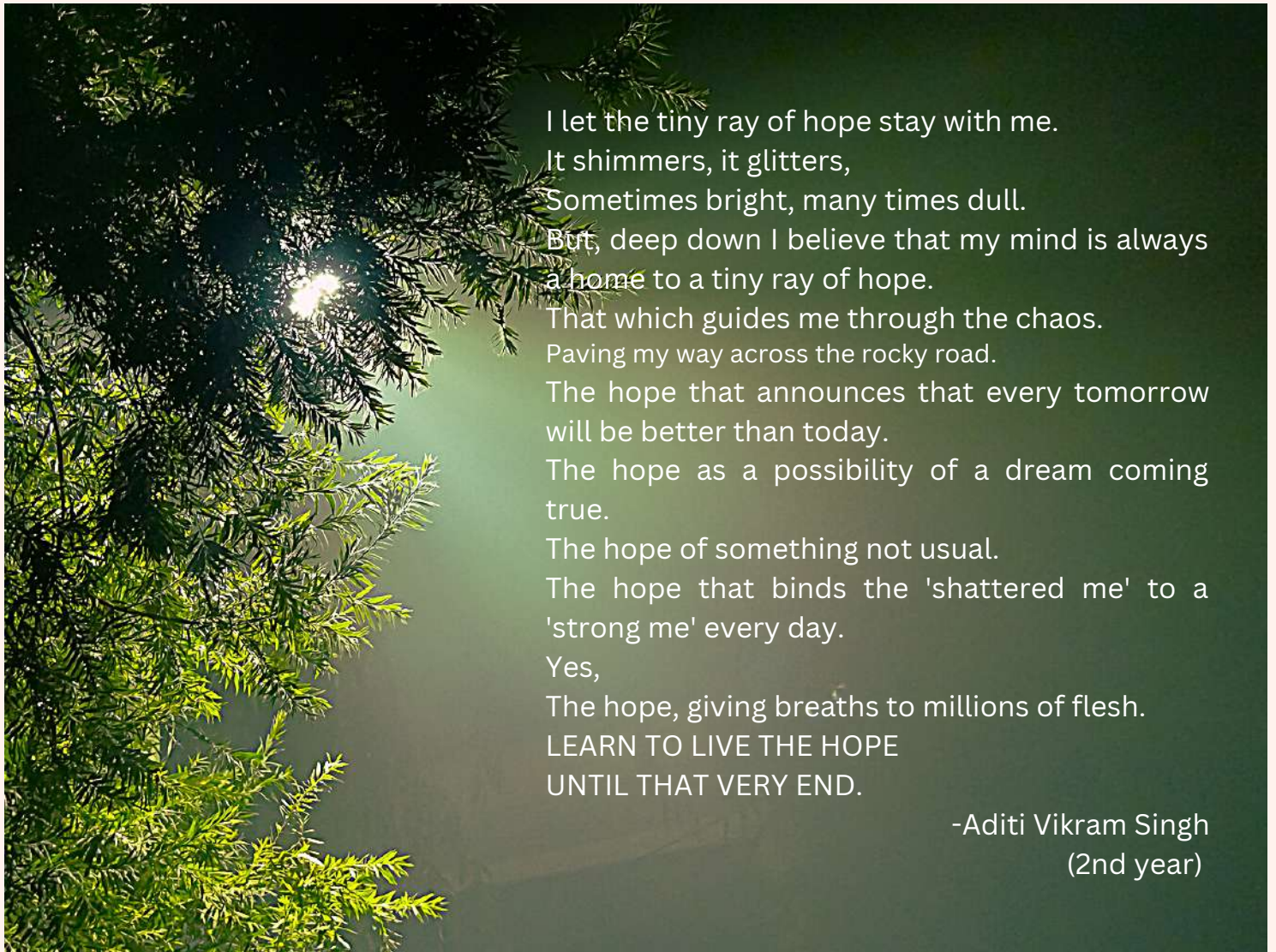
Ekta, 2nd year



Ekta, 2nd year



A TINY RAY OF HOPE



I let the tiny ray of hope stay with me.
It shimmers, it glitters,
Sometimes bright, many times dull.
But, deep down I believe that my mind is always
a home to a tiny ray of hope.
That which guides me through the chaos.
Paving my way across the rocky road.
The hope that announces that every tomorrow
will be better than today.
The hope as a possibility of a dream coming
true.
The hope of something not usual.
The hope that binds the 'shattered me' to a
'strong me' every day.
Yes,
The hope, giving breaths to millions of flesh.
LEARN TO LIVE THE HOPE
UNTIL THAT VERY END.

-Aditi Vikram Singh
(2nd year)



Neha Singh, 2nd year



Aman Verma, 2nd year



Aman Verma, 2nd year

EVENTS OF 2022-23

UNION MEMBERS

President	Vice president	Treasurer	Secretary	Joint Secretary
				
Mansi	Ashvineet	Anju	Vaishnavi	Vidushi

Graphic designers

Aditi (3rd year)
Laxmi (2nd year)
Riya Kumari (1st year)

Social media handlers

Saloni Sharma (3rd year)
Aman (2nd year)
Varnika Choudhary (1st year)

Newsletter Editors

Ria Vasdev (3rd year)
Anjali Singh (2nd year)
Manya Yadav (1st year)

TEACHERS' DAY CELEBRATION



The Physics association organized an event on the occasion of Teacher's day on 5th September 2022. The event was a joyous celebration in recognition of our teachers and their selfless efforts to help us achieve great successes in our lives. The celebration began with an address to our teachers followed by several students who showcased their wonderful talents and put up a fun and entertaining performance for everyone to enjoy. The event ended with a screening of the brilliant movie interstellar which was thoroughly enjoyed by all present there.

EVENTS OF 2022-23



INAUGURAL LECTURE

After association formation, the academic session started by an inaugural lecture on “Surprises from the sky” by eminent speaker Prof. T.R. Seshadri Sir (Department of Physics and Astrophysics, DU) on 9 September, 2022. The lecture commenced with the lighting of the lamp by the eminent Prof. T.R. Seshadri in presence of Vice Principal Prof. Sarita Nanda, IQAC convener Prof. Rajni Sahni, all Physics faculty members and students. Prof. T.R. Seshadri Sir introduced many topics like the strange behavior of the orbit of Uranus, the velocity flow of distant galaxies, the story of delta Cephei and similar stars.

He also told the audience stories of forgotten women astronomers like Henrietta Swan Leavitt who contributed to astronomy.



The conference hall was filled with people engrossed and fascinated by astronomy. There were almost more than 100 students who attended the lecture in the conference hall. Their curiosity was seen during the question and answer session. It was a very interesting and informative lecture for all attendees. At the end, last year (2021-2022) awardees were felicitated for their annual contribution in union and participation in various activities held by the Physics Department.

SCISPY SCIENTIFIC GUESSING ACTIVITY

Coherence, The Physics Association of DRC has organized “SCISPY - a scientific guessing activity” for the first and second year students of the Physics Department on 7th July, 2022. The event was conducted online along with 30 students. The event for judging the participants' knowledge of guessing scientific phenomena when presented with some basic details photos, clips and videos. The winners of the activity were:

- First position - Shivani and Priyanshi (1st year)
- Second position - Pratidipta Mehra and Neha Choudhary (1st year)
- Third position - Neetu Rani and Vidushi Shivhare (1st year)

EVENTS OF 2022-23



VISIT TO CSIR-NPL

The Physics Department of DRC organized the two visits to the CSIR-National Physical Laboratory(NPL) Pusa road, Delhi. NPL celebrated its Foundation day (around 50 students and 4 teachers) on 4th January 2023 and International year of Millets (around 40 students and 2 teachers) on 30th January, 2023, participants attended

lectures and visited various labs. NPL is a national standards laboratory of India that maintains the standards of SI units in India and calibrates the national standards of weight, frequency, time and measurements. The students were given a tour of the campus of NPL, where they visited the machinery lab, solar lab, Carbon labs and OLED lab. Students learned about polymeric materials, carbon materials and luminescent materials and their applications. These visits help students in developing research aptitude.



Freshers were dressed as Bollywood characters and introduced themselves through their rocking ramp walk (Round-I), freshers showed their talents as dancing, singing etc (Round-II)

and general question/answer were asked for selected freshers (Round-III) and selected freshers get titled as below. To welcome freshers various performances such as group dances, songs and play on Guitar done by seniors were brought to a memorable event. The winners of Fresher's Meet were:

Miss Talented- Ruchita Joshi (1st Year)
Miss Fresher- Stuti (1st Year)
Miss Witty- Kartika Bhardwaj (1st Year)
Miss Best Dressed- Himanshi Chaudhary (1st Year)

FRESHER'S DAY MEET

The Physics Association has organized a Fresher's Meet on 3rd February, 2023. It is the day seniors get to know their juniors and come together to celebrate being part of the college. The theme of Fresher's Meet-2023 was "Bollywood".



ARTISTA SCRIBE



Neha Singh, 2nd year



Aman Verma, 2nd year



Aman Verma, 2nd year



Sejal Madan 3rd year



Aman Verma, 2nd year



Aman Verma, 2nd year



Aman Verma, 2nd year

DEPARTMENT WINNERS

These students of the Physics Department have made us proud by showcasing their talents on an inter college level.

Sr. No.	Name	Competition	Position
1.	Shikha Dhankhar	Graffiti Contest (Vivekanand College)	1st
2.	Shikha	TasveerMania-Poster Making (Atma Ram Sanatan Dharma College)	1st
3.	Gunjan Mishra	Tote Bag Painting Competition (Republica, Delhi University)	1st
4.	Aman	Poster Making (Rashtr Sevika Samiti)	1st
5.	Anju	Kabbadi (DelhiUniversity Sports Council)	2nd
6.	Khushi	Scirap (Coherence, Daulat Ram College)	2nd
7.	Sakshi	Research Paper Writing Competition (Bhartiya Sikhsha Mandal - Yuva Aayam)	3rd

EVENTS

Coherence
The Physics Association
Daulat Ram College

Presents

VisIndia
YOUR VISION FOR INDIA
a poster making competition

Date - 17 August 2022
Venue - physics department @L
Time - 3:15 pm to 4:30 pm

Last date for registration - 16 august 2022
till 2:00 pm

For Queries contact -
Mansi rathi
(president) - 7982691797
Ashvineet kaur (vice
president) - 9041011716

COHERENCE
THE PHYSICS ASSOCIATION
DAULAT RAM COLLEGE
UNIVERSITY OF DELHI

*Cordially invites all the teachers
of the physics department to
celebrate Teachers Day-2022*

A grand celebration is awaiting on

SEPTEMBER	MONDAY 05	FROM 11:30AM
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*Your presence would add
an essence of sweetness...*

Coherence
The Physics Association
Daulat Ram College

Cordially invites you to the

Freshers Party

Venue: Seminar hall, Sadbhavna Bhawan

Program schedule:

12:00 to 12:30 :Lunch at canteen area
12:30 to 1:00: Settling down in seminar hall
1:00 to 3:30 :Program
3:30 to 4:00 :DJ Time
4:00 to 4:30: Refreshment

Date: 3 Feb 2023

Coherence
The Physics Association
Daulat Ram College
University of Delhi

NIRF RANK: 26 NAAC GRADE: A+
INDIA TODAY RANK (Science: 7 | Commerce: 13 | Humanities: 15)
DBT STAR COLLEGE

invites you to the

INAUGURAL LECTURE
titled
**Surprises from
the sky**

Prof. Savita Roy
Principal
Daulat Ram College
University of Delhi

Prof. T.R. Seshadri
(Eminent speaker)
Department of
Physics and Astrophysics
University of Delhi

September 9, 2022
Friday

9:30 a.m
Conference Hall

Coherence
The Physics Association
Daulat Ram College

*"Success can come to you by courageous devotion to the
task lying in front of you."*

**VOCAL VOYAGERS:
THE SPEECH COMPETITION**
On the Occasion of
National Science Day
28 Feb 2023

Topic: CV Raman and his contributions

Instructions:
UPLOAD A VIDEO ON THE GIVEN TOPIC
MAXIMUM VIDEO LENGTH: 2 MINUTES
LANGUAGE: ENGLISH/HINDI
SUBMIT THE ENTRIES BY 27 FEB 2023, 11:00 PM

CERTIFICATES WILL BE PROVIDED TO ALL THE WINNERS