

# DEPARTMENT OF PHYSICS: ANNUAL REPORT 2020-21

## WMO ARTS & SCIENCE COLLEGE, MUTTIL

2020- 2021 was an interesting academic year in the sense that COVID pandemic flipped everything upside down. Though the college and department of physics had some difficulties in adapting to the new environment, we were able to switch to online classes and online programs thanks to the leadership and availability of facilities. Almost all activities were online programs due to the lockdown.

### I. ACADEMIC PROGRAMS OFFERED BY THE DEPARTMENT

Sl. No	Name of the Program	Aided / self financing
1	BSc Physics	Aided
2	MSc Physics	Self financing

### II. DETAILS OF FACULTY

Sl. No	Name of the Faculty	Designation	Qualifications	NET/JRF / GATE/ SET
1	Biju KG	Associate Professor	PhD	Nil
2	Hashim NK	Assistant Professor	MSc	NET
3	Joseph MV	Rtd. Professor	MSc	Nil
4	Amaya Sivan	Assistant Professor	MSc	Nil
5	Febina C K	Assistant Professor	MSc	SET
6	Nidhin Soman P	Assistant Professor	MSc	NET
7	Neeraja Krishna	Assistant Professor	MSc	Nil
8	Muhammad Javad P	Assistant Professor	MSc	JRF

### III. STUDENTS DETAILS

Programme	Year	Student Strength	Total
BSc Physics	I Year	40	120
	II Year	41	
	III Year	39	
MSc Physics	I Year	18	34
	II Year	16	
TOTAL STUDENTS			154

### IV. UNIVERSITY EXAMINATION RESULT (2020-21)

PROGRAMME	No of students attended the examination	No of students passed	Pass %
BSc Physics	39	29	74
MSc Physics	16	11	69

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### V. DEPARTMENT ACTIVITIES

#### 1. Online Talk Series


The Department of Physics conducted an online talk series during the peak of Pandemic. The series included five talks by faculties from various institutions in India

ONLINE LECTURE SERIES 2020  
Department of Physics  
WMO Arts & Science College  
Muttill

Online talk on

## Expanding Universe

Resource Person:



**Dr. ANAND NARAYANAN**  
(India Institute of Space Science, Trivandrum)

Date: 13-06-2020 (Saturday); 11 am

Platform: Google meet  
Link: <https://meet.google.com/xkp-xyhd-rht>

The series started with a talk on Expanding universe by Dr. Anand Narayanan, Indian Institute of Science, Trivandrum. The talk was organized via googlemeet on 13th June 2020. Almost all students and faculties from physics department attended the talk.


The second instalment of the series was a talk on Women in Science by Dr. Resmi Lekshmi, Department of Earth & Space Sciences IIST, Thiruvananthapuram. The talk was held on 20/06/20 via google meet. Dr. Resmi Lekshmi gave an exciting insight into the contributions and achievements of women in science. She also focused on the current opportunities emerging in the field of science.

Online Lecture Series Organized by  
Department of Physics  
WMO Arts & Science College  
Muttill

SECOND LECTURE OF THE SERIES

Topic

## WOMEN IN SCIENCE



**DR. RESMI LEKSHMI**  
Dept. of Earth & Space Sciences  
IIST  
Thiruvananthapuram

20.06.2020  
SATURDAY  
1045 AM - 1130 AM

Registration Link: <http://shorturl.at/hicz4Q>

Talk Platform: Google meet  
Target Group: B.SC & M.SC Physics Students  
Maximum Participants: 500

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Online Lecture Series  
Department of Physics  
WMO Arts & Science College,  
Muttill

3<sup>rd</sup> Talk of the series  
Topic:  
**Tropical Cyclone and Climate  
Change**

Resource Person:  
**Dr.M.Govindankutty**

Department of Earth and  
Space Science, IIST

27 th June 2020  
Saturday  
10.30 am-11.30am

Online platform:  
Google meet  
Register through the  
link:[shorturl.at/fgm48](http://shorturl.at/fgm48)

The 3rd talk of the series was on Tropical Cyclone and Climate change, One of the most heated topics of the time by Dr. M Govindankutty, Department of Earth and Space Sciences, IIST. The talk was organized on 27th June 2020 via googlemeet

Another talk in the series was given by Dr. Shubha PA, former HOD, Department of Physics, Farook College. The topic was 'The Beauty of Nonlinear Systems'. Students had an opportunity to hear about Chaos and nonlinear systems and its significance in day-to-day life. The talk was held on 1st August 2020 via google meet.

ONLINE LECTURE SERIES  
DEPT. OF PHYSICS  
WMO COLLEGE, MUTTIL

4<sup>th</sup> talk of the series  
**THE BEAUTY OF NON  
LINEAR SYSTEMS**

**Dr.SUBHA P A**  
(Former HOD,  
Department Of Physics,  
Farook college)

01/08/2020                      10.30-11.30am

PLATFORM:GOOGLE MEET  
<http://shorturl.at/uEK04>

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**ONLINE LECTURE SERIES 2020**  
Department of Physics  
WMO Arts & Science  
College Muttill.

5<sup>th</sup> talk of the series

**30 YEARS OF HUBBLE  
SPACE TELESCOPE**

Resource Person  
**Dr. VIVEKM**  
(Ramangjan Fellow, Indian  
Institute of Astrophysics (IIA)  
Bangalore)

Date: 22-08-20 (Saturday)  
Time 10.30-11.30 am

ONLINE PLATFORM: GOOGLE MEET

The fifth and final talk of the series was on '30 Years of Hubble Space Telescope' by Dr. Vivek M, IIA, Bangalore. The talk peaked into the pasts of our history. It was held on 22nd August 2020 via googlemeet

## 2. Regional Astronomy meeting

Another interesting and exciting online activity was the Regional Astronomy Meeting. The two-day program was on 9th and 10th July 2020. The sixth regional meeting focussed on the topic 'Research in Astronomy: Opportunities and Challenges'. The program was sponsored by IUCAA. The inaugural talk was presented by Prof. Ajit Kembhavi, IUCAA, Pune. Main

**9-JULY-2020 – Lightning talks Order**

- "Investigating Particle Acceleration in the Wolf-Rayet bubble G2.4+1.4",  
Prachi Prajapati, Physical Research Laboratory, Ahmedabad
- "Correlations Between CME Parameters and Sunspot Activity in Solar Cycle 23 and 24",  
Shifana Koya, CUSAT, Kochi
- "Study of Long Term Variation in Solar Activity",  
Prabha K., CUSAT, Kochi
- "On the Identification of new Classical Ae stars using LAMOST DR5",  
Anisha R, CHRIST (Deemed to be University), Bangalore
- "Is the ratio of blue to red supergiants indicative of the metallicity of an open cluster?",  
Keeshaana S Narayan, CHRIST (Deemed to be University), Bangalore
- "Transition candidates from the pre-main sequence to the main sequence phase",  
Suman Bhattacharyya, CHRIST (Deemed to be University), Bangalore
- "Characterization of stars in Nearby Young Moving groups",  
Raksha S, CHRIST (Deemed to be University), Bangalore

**10-JULY-2020 – Lightning talks Order**

- "Modelling Galaxy Rotation Curves",  
Lekshmi Priya, CUSAT, Kochi
- "Theory-Independent tests of General Relativity by analysing Black Hole Images",  
Saurabh, University of Delhi
- "Twin Lines of Sight Observations of Metal-Rich Gas in a Galaxy Group",  
Pratyush Anshul, IIST, Thiruvananthapuram
- "The Longitude Dependence of Number Counts of Stars and Galaxies within the Solar Neighbourhood",  
Merin Joy, Sacred Heart College, Chalakkudy
- "The study of Latitude Dependence of Number Counts of Stars and Galaxies Within the Solar Neighborhood",  
Shafina Kishore, Sacred Heart College, Chalakkudy
- "Gaia view of a Warp in the outer disk of the Large Magellanic Cloud",  
Saroorn S, Amrita University
- "Searching The Optical and UV Counterparts of Candidate Millisecond Pulsars",  
Anumaria J Puthur, Vimala college, Thiruv

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**About The Meeting**

This is the sixth regional meeting on "Research in Astronomy: Opportunities and Challenges". We believe that this workshop will help to commence and enhance active research collaborations within Astronomy researchers in the region. As in the earlier meetings, it is earnestly hoped that this meeting will turn out to be a venue for fruitful discussions, sharing of scientific results, and beneficial collaborations among the researchers in the region.

Prof. Ranjeev Misra (IUCAA)  
Dr. Vivek.M (IIA)

Dr. Joe Jacob (Newman College)  
Dr. Biju KG (WMO College, Muttill)

### Regional Astronomy Meeting

9 - 10 July 2020

### Research in Astronomy: Opportunities and Challenges

Online platform: Google Meet

Sponsored by:



### Highlights of the meeting:

- 9 Review talks by Senior Astronomers
- 22 Research talks by PhD students and Post Doc
- 14 Lightning talks by MSc students

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highlights of the program include Review talks by senior Astronomers, Research talks by PhD students and Postdoctoral fellows and Lightning talks by MSc students. There were 10 review talks of 30 minutes each, 17 presentations of 15 minutes each and several lightning talks during the workshop. Eminent personalities delivered talks include Prof. Ajit Kembhavi, IUCAA, Pune, Prof. Annapurni Subramaniam, IIA, Bangalore, Prof. Ramaprakash A. N., IUCAA, Pune, Prof. Ishwar Chandra, NCRA-TIFR, Pune, Prof. A. Gopakumar, TIFR, Mumbai, Prof. Manoj Puravankara, TIFR, Mumbai, Prof. Anand Narayanan, IIST, Thiruvananthapuram, Prof. Debbijoy Bhattacharya, Manipal Centre for Natural Sciences, Manipal, Dr. Joe Ninan, Pennsylvania State University, USA, Prof. Ninan Sajeet Philip, St. Thomas college, Kozhencherry, Prof. Indulekha K., Mahatma Gandhi University, Kottayam, Prof. Paul K. T., Christ University, Bangalore, Prof. Ravikumar C. D., University of Calicut, Kerala, Prof. Harikrishnan K. P., Cochin College, Kochi, Dr. Smitha Subramanian, IIA, Bangalore, Dr. Minu Joy, Alphonsa College, Pala, Prof. Titus K. Mathew, CUSAT, Kochi Organising Committee, Dr. Reju Sam John, IUCAA, Pune, Dr. Jithesh V., IUCAA, Pune, Dr. Sheelu Abraham, Mar Thoma College, Chungathara, Dr. Savithri Ezhikode, IUCAA, Pune, Dr. Charles Jose, CUSAT, Kochi, Dr. Vivek M, IIA, Bangalore, Dr. Biju K G, W.M.O. College, Muttill, Wayanad, Prof. Joe Jacob, Newman College, Thodupuzha, Prof. Ranjeev Mishra, IUCAA, Pune

### 3. National Science Day

The National Science Day was observed at the college. Ms Aparna KM was the chief guest. The program was conducted on 28th February 2021 via google meet.

## VI. STUDENT MAGAZINE

One of the most excruciating concerns during pandemic was the student life in campus. Students all over the world missed their campus life and we have seen its significance via



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news media. Student from department of physics however showed their enthusiasm and came up with a beautiful magazine for which the whole department gave immense support. Students adapted to the situation and decided on an online magazine. 2020-2021 magazine was named 'KARADU 2.0' following the previous year magazine 'KARADU'. Shameemudheen KA coordinated the efforts as the student editor. Students contributed to the magazine by providing articles and other creative ideas. Readers can look up the magazine here <https://online.fliphtml5.com/ppdig/gkxc/#p=11>

### VII. EMINENT PERSONALITIES VISITED THROUGH VIRTUAL PLATFORMS

1. Prof. Ajit Kembhavi, IUCAA, Pune
2. Prof. Annapurni Subramaniam, IIA, Bangalore
3. Prof. Ramaprakash A. N., IUCAA, Pune
4. Prof. Ishwar Chandra, NCRA-TIFR, Pune
5. Prof. A. Gopakumar, TIFR, Mumbai
6. Prof. Manoj Puravankara, TIFR, Mumbai
7. Prof. Anand Narayanan, IIST, Thiruvananthapuram
8. Prof. Debbijoy Bhattacharya, Manipal Centre for Natural Sciences, Manipal
9. Dr. Joe Ninan, Pennsylvania State University, USA
10. Prof. Ninan Sajeet Philip, St. Thomas college, Kozhencherry
11. Prof. Indulekha K., Mahatma Gandhi University, Kottayam
12. Prof. Paul K. T., Christ University, Bangalore
13. Prof. Ravikumar C. D., University of Calicut, Kerala
14. Prof. Harikrishnan K. P., Cochin College, Kochi
15. Dr. Smitha Subramanian, IIA, Bangalore
16. Dr. Minu Joy, Alphonsa College, Pala
17. Prof. Titus K. Mathew, CUSAT, Kochi
18. Dr. Reju Sam John, IUCAA, Pune
19. Dr. Jithesh V., IUCAA, Pune
20. Dr. Sheelu Abraham, Mar Thoma College, Chungathara
21. Dr. Savithri Ezhikode, IUCAA, Pune

## **DEPARTMENT OF PHYSICS: ANNUAL REPORT 2020-21**

### **WMO ARTS & SCIENCE COLLEGE, MUTTIL**

22. Dr. Charles Jose, CUSAT, Kochi
23. Dr. Vivek M, IIA, Bangalore
24. Prof. Joe Jacob, Newman College, Thodupuzha
25. Prof. Ranjeev Mishra, IUCAA, Pune
26. Prachi Praaavati, PRL Ahmedabad,
27. Dr. Anand Narayanan, Indian Institute of Science, Trivandrum.
28. Dr. Resmi Lekshmi, Department of Earth & Space Sciences IIST, Trivandrum.
29. Dr. M Govindankutty, Department of Earth and Space Sciences, IIST.
30. Dr. Shubha PA, former HOD, Department of Physics, Farook College
31. Dr. Vivek M, IIA, Bangalore

#### **VIII. ACHIEVEMENTS OF STUDENTS:**

- 16 out of the 29 students who passed BSc physics joined for higher studies.
- 4 of the MSc students joined for higher studies and two got employed in the software field.
- Geethika Gopinathan and Shammash Ahammed got PG admission in central Universities.

#### **IX. POSITIONS HELD BY FACULTY MEMBERS**

- Mr. Biju KG served as a member of UG Board of studies, University of Calicut.
- Mr. Biju KG is the chairman of even semester UG CV/CMV camps of Calicut University in the Wayanad region.
- Mr. Biju KG is the chairman of UG physics Practical examinations of Calicut University in the Wayanad region.
- Mr. Biju KG served as the IQAC Coordinator.
- Mr. Biju KG is a member of the College Council.
- Mr. Hashim NK is the officer in charge of NCC.
- Mr. Hashim NK is the coordinator of the Basic amenities cell of the college.

#### **X. BEST PRACTICES**

- The department collects used books from alumni and provide current students a department library facility
- The department has arranged an honesty shop, where students will get paper, pen, pencil, rubber, etc., and the money can be deposited in the box there. This is introduced to inculcate moral values like honesty, trust and self-respect in the students.