

'Eye to Sky'- Skywatch Workshops In Collaboration with

Kerala State Science and Technology Museum Thiruvananthapuram

Funded By

Kerala State Council For Science, Technology And Environment (KSCSTE)





Kerala State Council for Science, Technology and Environment

Binuja Thomas M. Tech Senior Scientist

No. SPC/109/2016/KSCSTE

23.02.2017

Madam,

Sub:- KSCSTE - Science Popularization Programme - reg.

Ref:- i) Your proposal entitled 'Eye to Sky'

ii) Minutes of the 28th meeting of the Science Popularization Committee held on 22th November 2016

With reference to the above, we are happy to note that the proposal is modified in line with recommendations of Science Popularization Committee (SPC). Based on the minutes of SPC, KSCSTE has decided to support the proposal by offering an amount of Rs. 2,00,000/- subject to the following.

The financial assistance for the programme will be under the following heads.

SI. No.	Item	Amount (Rs.)	
1.	Honorarium for Resource Persons	40,000	
2.	Organizing expenses	55,000	
3.	Travel expenses	35,000	
4.	Publicity materials	30,000	
5.	Documentation	30,000	
6.	Others	10,000	
	Grand Total	2.00.000	

- 2. Utilization of the grant for any other purpose other than the approved heads shall not be entertained.
- 3. The duration of the project shall be one year only.
- Due acknowledgment to KSCSTE should be provided in all brochures, invitation cards, publicity
 materials and proceedings brought out in connection with the programme as 'Supported and
 Co-sponsored by KSCSTE'.
- Initially, 50% of the approved amount will be released and the balance amount will be released based on the assessment of the progress of the project and subject to the submission of financial statements for the initial payment.
- Date of start of the project should be intimated to the Council and Quarterly Progress Reports (QPR)
 with effect from the date of start of the project should be submitted.

If the above is acceptable, you are requested to execute the Terms and Conditions (enclosed herewith), in a non judicial stamp paper worth Rs. 200/- counter signed by Head of the Institution.

Thanking you,

Yours sincerely,

Binuja Thomas

Dr. Malini K.A. Assistant Professor and Head, Department of Physics,

Vimala College, Thrissur – 680 009

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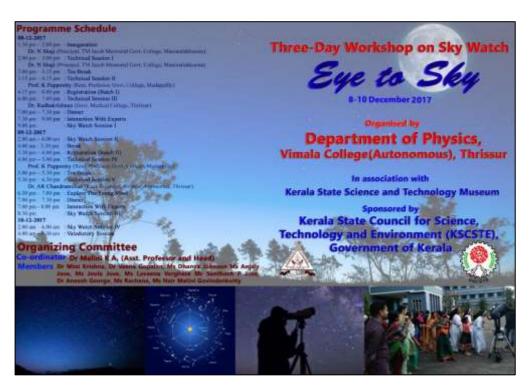


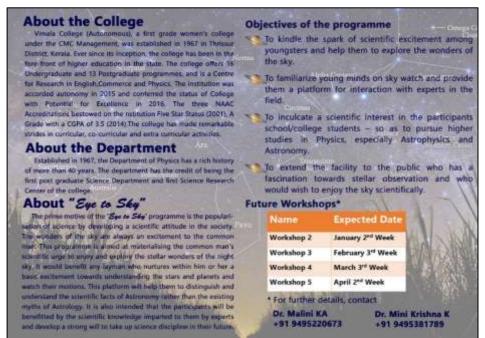
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EYE TO SKY - Workshop 1=REPORT







RESOURCE PERSONS

- Prof. Pappootty, Rtd Professor Govt College Madappally
- Dr Radhakrishnan, Govt Medical College Thrissur
- Dr Shaji N, Principal, TMJM Govt College, Manimalakkunnu
- Sri C R Chandramohan, Rtd Engineer and Amateur Astronomer

REPORT

The three-day workshop on sky watch conducted by the Post Graduate and Research Department of Physics, Vimala College(Autonomous), sponsored by Kerala State Council for Science Technology and Environment (KCSTE), which is the first and inaugural workshop in a series was held on 8-10 December 2017 at Vimala College (Autonomous). The inaugural function was held at the seminar hall at 3PM on 8th December. The function was presided over by Dr. Sr. Marriette. A. Therattil, Principal of Vimala College (Autonomous). Prof. Pappootty, Retd Professor, Dept of Physics, Madappally Govt College



was Chief Guest.Dr. Malini. K.A, Head of the Department of Physics and Coordinator of Eye to Sky Science Popularization program welcomed the gathering. Prof. Pappootty inaugurated the function and during his inaugural address Prof.

Pappootty pointed out some interesting facts about sky. He gave away the prizes for the winners of "Agni 2K7" Quiz competition conducted by the Physics department to commemorate the 2nddeath anniversary of Dr.A.P.J Abdul Kalam. Prof. Pappootty also released the first edition of the biannual newsletter 'The Assayer" an attempt to showcase the activities of Physics Department. M Sc student Ms Bonia Aleyas proposed the vote of thanks.



After a short tea break the first technical session started. The first technical session was handled by Prof. Pappootty. He described the sky as most beautiful creation & he inspired all to enjoy the sky. Sir talked about the development of the branch of AstroPhysics, the



difference between astronomy and astrology. In this session sir described how ancient people used stars and sky to calculate time, age, directions etc.



The second technical session was handled by Dr.Radhakrishnan (Professor, Govt. Medical College, Thrissur).Dr.Malini.K.A welcomed the resource person and the participants. He talked about "Raasi Chakram" and showed how to calculate the age of persons using that. Sir explained the science behind many ancient believes

and predictions. With the help of power point presentation Dr Radhakrishnan explained about Malayalam months, constellations, climatic variations etc. in terms of astronomy. He demonstrated eclipse, lunar cycles etc. with the help of Globe. He made universe as a beautiful memory in our mind and the talk ended with a philosophical note that our achievements and pride are irrelevant when compared to the vastness of universe.

After dinner we moved on to the sky watch session. We were able to enjoy the beauty of deep sky objects and various constellations. The technician from KSSTM (Kerala State Science and Technology Museum) Mr. Sumesh explained Orion constellation, nebulae,



Andromeda Galaxy, various stars etc. The sky was little cloudy. A video on a Mars mission was also shown.











Assessment Períod (2016 - 2021)



The second day of the workshop started at 3am on 9th December 2017. The second session of sky watch was conducted for the first batch who registered on 8th. We were able to observe Mars, Jupiter, its 4 satellites and some artificial satellites. Mr. Sumesh explained all moons of Jupiter and their revolution period and characteristics. The two red strips of Jupiter were also very clear. All participants were very excited to observe the surface of moon through the telescope. The most exciting and enlightening experience was the observation of moons craters and the information regarding the size of the biggest crater.

The evening program started later at 4.00 pm with the registration of the participants of this day. The participants included students from various neighboring schools, colleges



lunar cycles. He also described various planets, their atmosphere, features, relative dimension and possibility of life on planets. Prof. Pappootty also interacted with the participants of second day of the workshop.

and some public. The 3rd technical session was handled by Dr.Shaji N (Principal, T M Jacob Memorial Govt College, Manimalakkunnu). His talk was very much appreciated by all participants. Amateur Astronomer, Rtd Engineer Chandramohan was the second resource person for the evening. He talks was also rasichakra and



The students and participants were very enthusiastic to interact with participants. Books and study materials were distributed to the participants. After the dinner the sky watch session began. The sky was clearer. Moon's surface was much clearer. Many artificial satellites were seen, Mr.Sumesh explained details of the constellations.







On the next day 10thDecember 2017, early morning the 4th session began. Jupiter, and many others were seen. The 3-day workshop ended by the observation of Jupiter and its moons.

Total of 185 participants attended the first workshop and all were so excited and expressed their wish to attend future programs also.













A detailed report on the program was also published in the succeeding edition of *Campus beats* of *Mathrubhoomi* daily

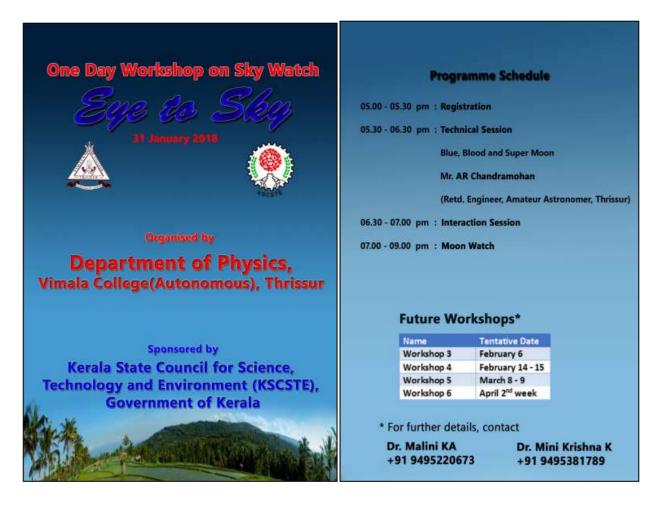




Newspaper Report on the Workshop



EYE TO SKY-workshop 2-REPORT



The rare lunar event being called the "SUPER BLUE BLOOD MOON" dazzled sky watchers around the world on January 31, 2018. A total lunar eclipse occurred on this day when the Moon was near its perigee on January 31 and so may be described as a "supermoon". As it was also a blue moon, the second full moon in the calendar month of January 2018, it was referred to as a "super blue blood moon"; the term *blood* refers to the typical color of the Moon during a total lunar eclipse. This coincidence last occurred on December 30, 1982 for the eastern hemisphere, and otherwise before that on March 31, 1866. The next occurrence will be on January 31, 2037, one metonic cycle (19 years) later.

Understanding the significance of this rare occasion, we the Dept of Physics organized a "Moon Watch Workshop" on 31st January night at the indoor stadium ground of Vimala College, Thrissur. This was the second workshop of our workshop series of KSCSTE sponsored programme "Eye to Sky". The details of moon watch session along with seminar was informed in media to be open to the students and public alike.





The programme started 5:30pm at the indoor stadium with a welcome address by Mr. Santhosh P Jose, Asst Professor Department of Physics. The resource person was Mr. Chandramohan, Retd Engineer and Amateur astronomer. He talked about the different types

of eclipses and the occurrence of solar and lunar eclipses. We were able to distinguish between blue moon, red moon and supermoon aspects of this lunar eclipse from his informative discourse. He briefed about the different lunar expeditions by our space voyagers and the outcomes. He also shared some interesting facts about the origin of Rashi chakra and grihanila in astrology. We were also supported by MrMubarak, B.Tech student from Govt Engg College,



Thrissur. He extended the telescope facility for the program.

We gathered at the Vimala Indoor Stadium Ground for witnessing this rare event. Around 220 people which included students and public from different sectors registered for the same. Even though the celestial treat had begun earlier in the sky, it was visible for us only at nearly 7:00 pm. A lunar eclipse would occur when the Moon passed within



Earth's umbra (shadow). As the eclipse began, Earth's shadow first darkened the Moon slightly. Then, the shadow began to "cover" part of the Moon, turning it a dark red-brown color (typically – the color can vary based on atmospheric conditions). The Moon appeared



to be reddish because of Rayleigh scattering (the same effect that causes sunsets to appear reddish). We were able to view the red coloured moon through the help of a telescope and set of binoculars. It was

really very exciting to see the different stages after the view of the red coloured full moon. The beautiful way in which the refraction of the light by Earth's atmosphere enter into umbraregion of moon were viewed with enthusiasm both by the public and students. The eclipse ended by 7:45 pm. All those who gathered at the ground were really mesmerized by the sight at the sky. The programme ended by 8:30 pm. The organisers thanked the active participation and enthusiasm of students and public for it was really motivating for us to pursue the sky watch programme in the most efficient way.







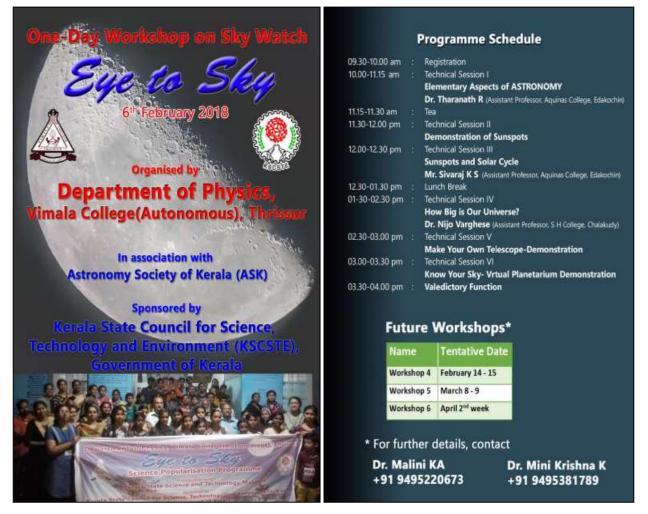








EYE TO SKY —workshop 3



Eye to sky is an interesting initiative of the department of Physics of Vimala College Thrissur. The workshops conducted in this connection were very useful for the students and public to overcome the misconcepts and superstitions about star and planets on human life. The third workshop was conducted on 6th February 2018. It was a one-day workshop on telescope making and sky watch. It was conducted in association with the Astronomical Society of Kerala. The program was coordinated by Dr.Malini KA and the faculty members from Department of Physics Vimala College Thrissur. Students from various colleges and schools participated in the program.

The program was inaugurated at 10.00 am in the silver jubilee seminar hall by the Vice principal Dr Sr Mable. Program coordinator Dr Malini KA welcomed all participants and the resource persons to the workshop.



The first session Astronomy -Past and Future, was handle by Dr Tharanath R Asst Professor, Aquinas College Edakochi. Dr Tharanath elaborated about Lunar and solar eclipses, waxing and waning of moon and venus, life cycle of sun and stars, transit and occulation of planets,



importance of Arther Edington's formula in physics and d by electron degeneracy pressure. After the tea break the sunspot demonstration was conducted by the resource persons. Dr



Nijo Varghese of SH College Chalakudy headed the team. After the demonstration the session on sun spots and Solar cycle by Mr. KS Sivaraj of Aquinas College, Edakochi was well appreciated by the entire participants. In this session he explained about helioseiesmology, Rodolf index, butterfly diagram, Mounder minimum, van Allen Belt Aurora and

Lagrangain Points. Next session was started after the lunch break at 1.30 pm and was handled by Dr NijoVarghese, Asst.Professor SH College Chalakudy. Dr Nijo's talk was on the topic 'How big is our Universe' He elaborated on Hubles law, cosmology, dark energy, dark matter, accelerating universe etc.



making demonstration session. Dr Tharanath and Dr Nijo handled the session. The participants were given hands on training in telescope making. This last session of the workshop was handled by Dr Saneersh Sebastian of St Macheals college Cherthala. It was very helpful to learn more about sky. It was a virtual planetarium demonstration session. Dr



saneesh explained the Stellarium App in detail. All could enjoy the talk and some participants could get a chance to identify their birthstar using the software.

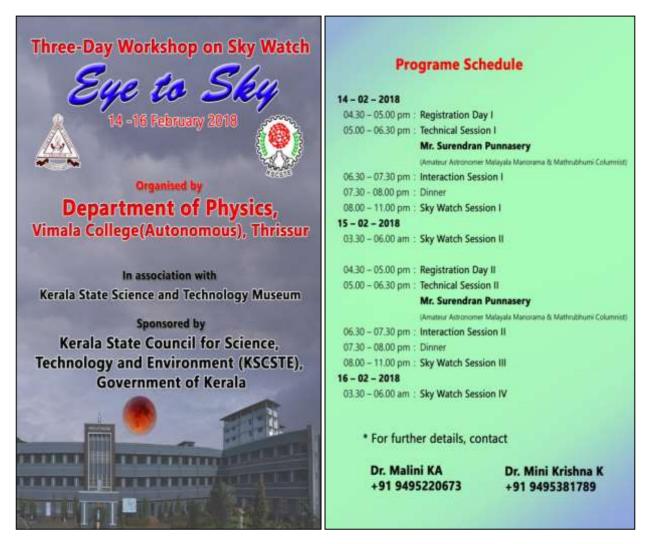
41 students and 1 school teacher attended the workshop. The one-day workshop came to an end by 4.30pm. Dr Veena Gopalan, Asst Professor Dept of Physics Vimala College Proposed vote of thanks to all participants and resource persons.







EYE TO SKY workshop 4



The fourth workshop on eye to sky conducted during 14-16 February, 2018 at Vimala College. The resource person for the workshop was Mr. SurendranPunnassery, Amateur astronomer, science fiction writer and newspaper columnist. The workshop started on February 14, at 5.30 pm in the silver jubilee seminar hall. Dr. Malini K A, coordinator of the programme gave a warm welcome to him. About 80participants from Vimala College and other institutions attended the workshop.

Mr. Surendran gave a fantastic talk to students in an artistically different way. As he is an amateur astronomer, he started with meaning of amateur the latin word, true lover. He himself explains as 'nakshathrangaludepriyakamukan'. He says that universe is a big canvas consisting of different types of people like artists, scientists, Astroscientists etc. As February



14 is valentine's day, he wished the universal love may move beyond the horizon. Coming together means we must go beyond the Selfies and selfishness. The sky literacy and astronomy literacy are not just only dull equations and derivations but the love to



nature, sky and joyful observation. Quoting from the famous book Cosmos of Carl Sagan he said that life might be originated in stars as carbon, iron, oxygen was synthesized in nova or supernova. In that sense, Sagan says the relationship between stars and human being. We cannot think away from stars. All fictions and modern stories are incomplete without the wonderful explanation about stars. The curiosity towards light includes in stories, songs, pictures etc. The session was quite interactive and sung songs about sky, moon etc. The beauty, imagination and science of songs could be best felt with songs.

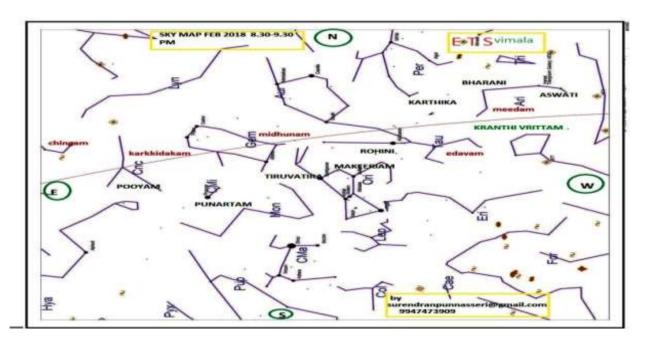


He suggested that an Astronomy Club Vimala Astronomy Club (VAC) be formed and inaugurated in the near future. He said that all festivals are associated with sky. After the talk, students moved to the ground and started watching sky and stars. Mr. Surendran explained the various galaxies, nebulae. The nebulae; The place of star birth could be seen beautifully with 'Celestron'. Various stars and 'nakshathraganangal' could be seen in sky with



his binocular too. The next day morning, planets; mars, Jupiter and Saturn could be watched in the sky with naked eye as well as celestron.

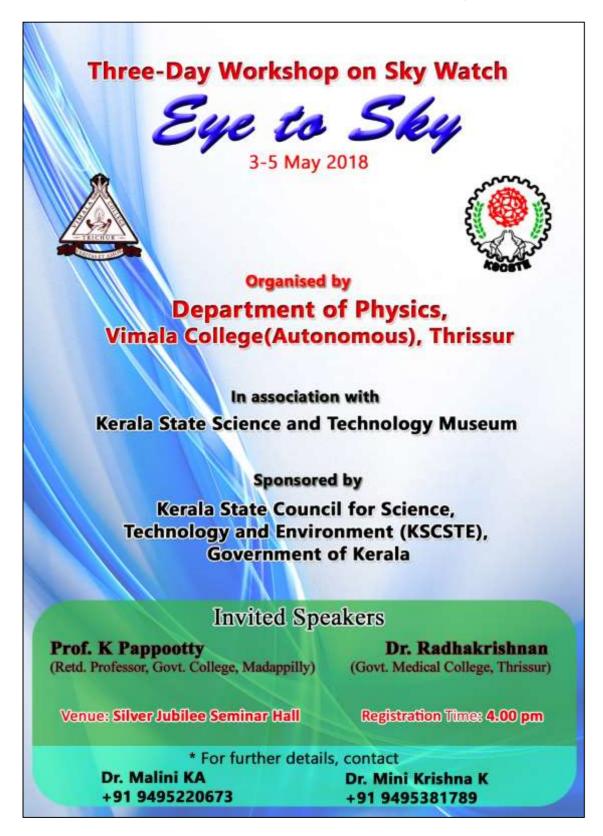
The second day also, programme started at 5.30pm in the seminar hall with main participants are our own final year B.Sc Physics students. Dr. Malini K A introduced resource person to the audience and Mr. Surendran Punnassery gave a fantastic talk on astronomy with beautiful videos and audios. The sky watching went interestingly as in the previous day continued with planet watching in the next day morning. Thus, the fourth workshop ended successfully.







EYE TO SKY workshop 5



The last and final workshop of the eye to sky workshop planned to be held during 3-5 May 2018. We have arranged everything for the three-day program. The target groups and students



registered were from Chavara Public School Koonammvu, Ernakulum Dist., Alphonsa College Pala and nearly hundred participants of the summer science camp of Vigyan Sagar Thrissur. But unfortunately, on the evening of 2nd May we were informed by the KSSTM officials regarding the malfunction of telescope. This made all of us in a dilemma. Finally, we decided to go ahead with the program with the help of other star lovers. We were very fortunate to have Chandramohan sir and Mr Mubarak as our collaborators for the last workshop. They brought their telescopes and instead of one telescope we got two telescopes for the program. So, we conducted the program very smoothly for the students of Chavara Public School, Koonammav.

The program started at 5.30 pm by a short welcome by Dr Malini K A. The first session was handled by Prof. K Pappootty, Rtd Professor Govt college Madappally. He talked about how



star became so significant and about the ancient times when stars were more than some diamonds in



the sky. He briefed about how ideas of Nakshatras and Rashi come into being. The students were given an opportunity to see Venus through the telescope. After that short observation Pappootty sir continued his class and he talked about solar system and beyond the boundaries of Solar system. Sir also demonstrated a method to calculate distance on

of planets from sun.

The second session of the day was handled by Mr.Chandramohan. Through his excellent slides sir provided a wonderful picture of planets, their sizes, moons and other celestial objects.



After the dinner the participants were given an opportunity to interact with the experts. Later they were taken to the observation point where everything was set. The resource persons including Dr Radhakrishnan, and Mr Mubarak guided and helped them to identify Nakshatras and Rashi. As the sky was cloudy some of the Rashis were not visible. Andromeda Galaxy, Orion constellation, Orion nebula etc. were also visible.



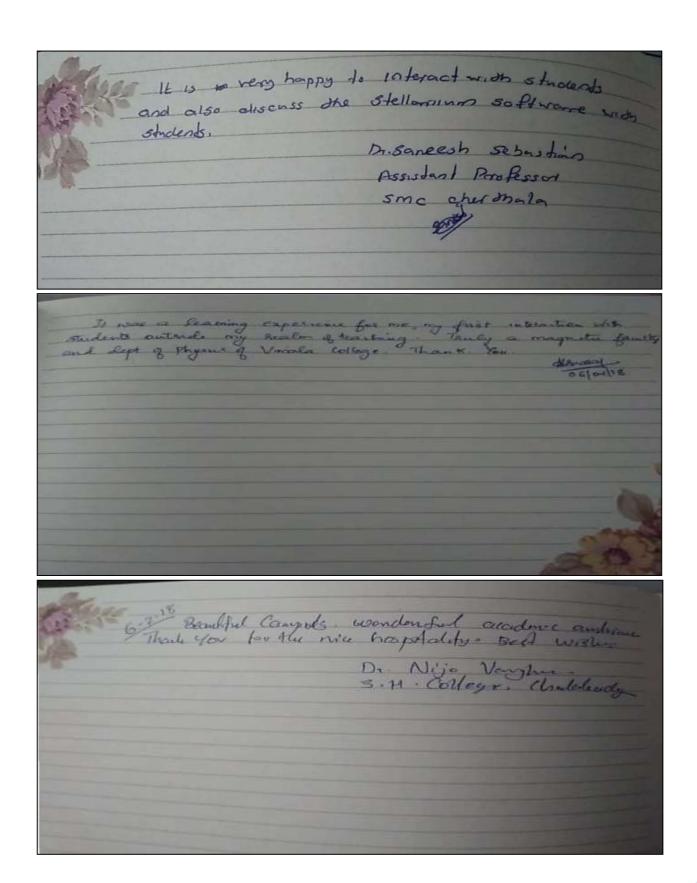
The next session was the last technical session of the day started at 10pm. It was handled by Dr Radhakrishnan sir of Medical College, Thrissur. With the help of brilliant slides Dr Radhakrishnan pointed out that we humans are so small and insignificant compared to the multiple universe. Dr Radhakrishan scientifically explained and proved the fact that the superstitions regarding stars and their influence in our life are wrong. He concluded the talk by saying that we are insignificant compared to universe but our discoveries and achievements are also remarkable.



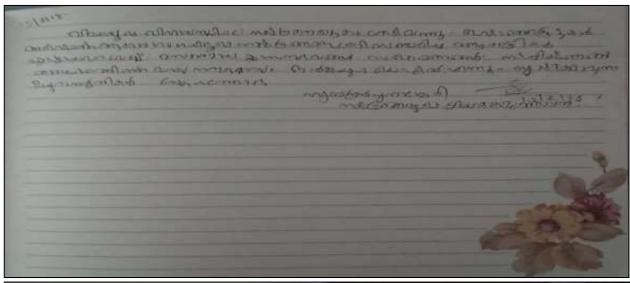
REMARKS OF RESOURCE PERSONS

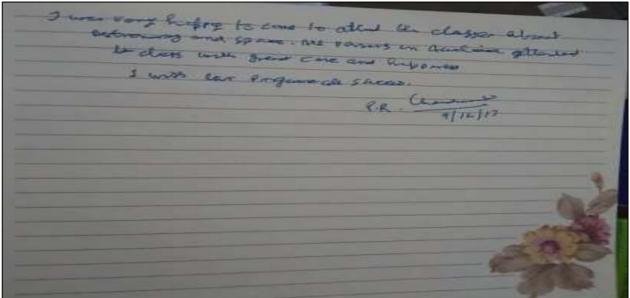
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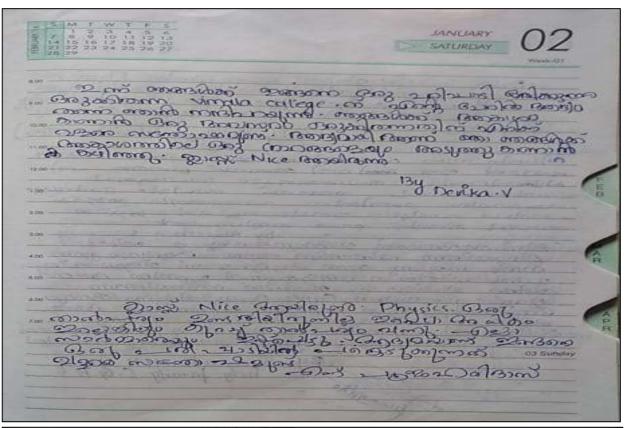


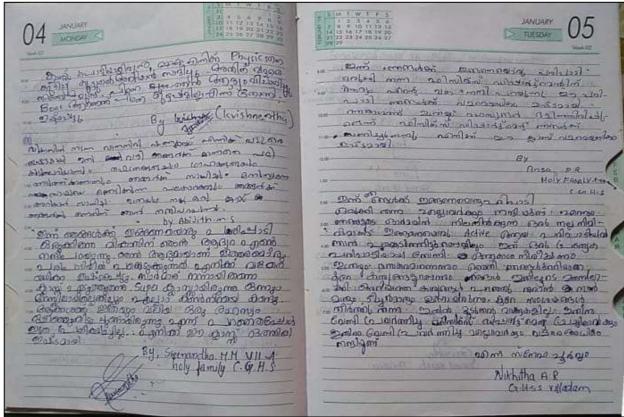




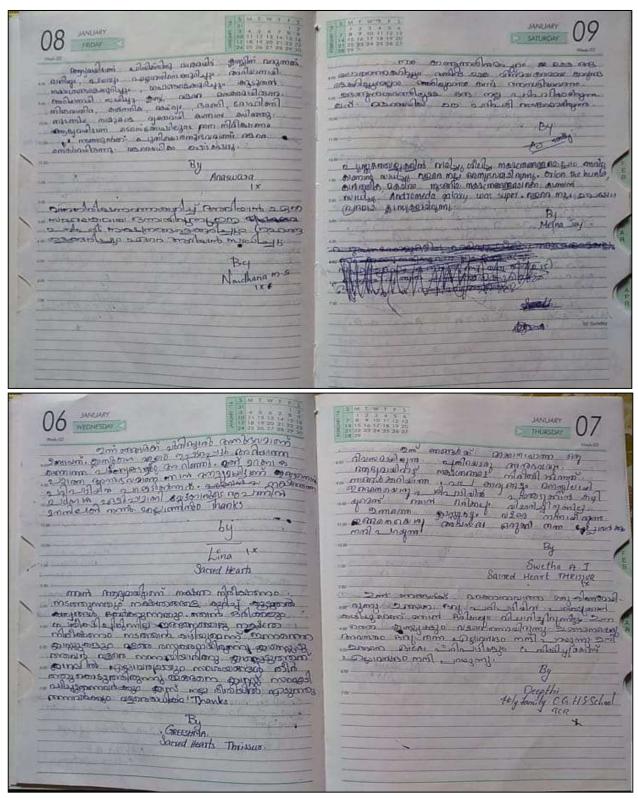


FEEDBACK FROM PARTICIPANTS

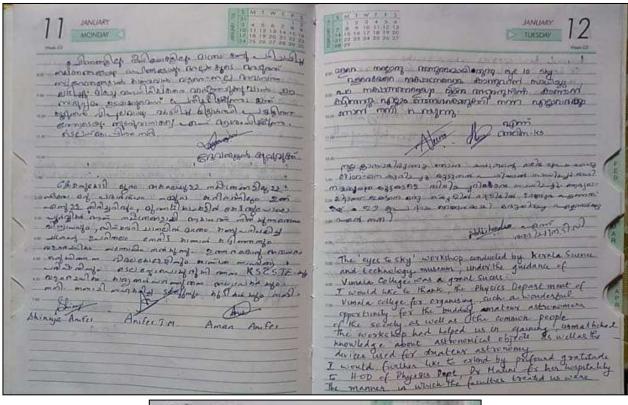


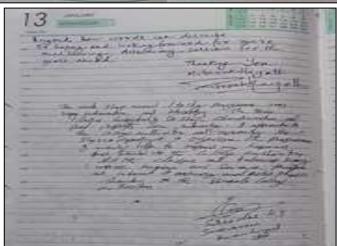














Summary of the project

Five Workshops were organized by the Department of Physics as a part of the KSCSTE funded project "Eye to Sky".

The first workshop was conducted during 8-10, December, 2017. The formal inauguration of the workshops were made by renowned academician Prof. K Pappootty, Retired Professor, Govt College Madappilly. Participants of the three day workshop were benefitted by the enriching talks by the resource persons. Prof N Shaji of TMJM Govt College, Manimalakkunnu, Dr Radhakrishnan, Professor Govt Medical college Thrissur, Rtd Engg.Mr Chandramohan were the resource person for the workshop 1. More than 180 participants from various schools and institutions attended the workshop.

The second workshop was conducted on 31st January 2018. It was conducted on Blue Blood Super Moon day and the one day workshop was highlighted by the massive participation of the public. The resource person was the Amateur Astronomers Mr. Chandramohan and Mr Mubarack were the resource persons for the day. Nearly 220 participants registered and many more attended the workshop.

The third workshop was held on 6th February. The main attraction of the workshop was training on telescope making. The resource persons were Dr Nijo Varghese, Dr Tharanath, Dr Saneesh Sebastian and Mr Sivaraj. Other than selected students from the department, 42 participants from outside including 1 teacher attended the workshop.

The fourth workshop on eye to sky conducted during 14-16 February, 2018 at Vimala College. The resource person for the workshop was Mr. Surendran Punnassery, Amateur astronomer, science fiction writer and newspaper columnist. 86 participants attended the two day workshop.

The last and final workshop of the eye to sky workshop planned to be held during 3-5 May 2018. The various sessions were handled by Prof Papputty, Dr Radhakrishnan, Mr Chandramohan and Mr Mubarak. Nearly 40 students attended the workshop. The workshop was limited to two days due to bad whether and technical problem with the telescope.



Outcome and Scope of the future work

The science popularization program EYE to SKY was successfully completed with the financial support of KSCSTE. The outcome and achieved objectives are

- Basic knowledge in observational astronomy:
- Reduced the misconcepts in astrology:
- Skill development :sky watch tools telescopes, binoculars, stellarium and other astronomical mobile applications
- Provide a platform to discuss and disseminate knowle
- Nodal centre with facilities for astronomical observation
- To encourage students to take up higher studies in Astrophysics
- To ignite the scientific curiosity among students and create awareness among public to help distinguish astrology and astronomy

Development of **Astronomy Club in Vimala College** named **VIMALA ASTRONOMY CLUB** (**VAC**) is the most expected outcome of the workshop which will serve as a connecting bridge between the campus and public.

Under the auspices of this club, regular activities related to astronomical events and observations will be conducted. At least one Eye to sky workshop will be conducted every year.

One more major outcome of this workshop is the initiation of **Add on course on Amateur Astronomy**, which is offered to all interested undergraduate students. The department of Physics offers this course from the academic year 2018-19 onwards



Eye to sky Work-shop Feedback Form

Questions

	o your ovorum doe	sessment of the	event: (1 = msumer	ent - 5 = ex	cellent)	
	1	2	3	4	5	
2) Which	aspects of the wo	orkshop did you	find most interesting	ng or usefu	!?	
3) Did the	e workshop achie	ve the programr	ne objectives?			
	Yes		No			
If no	, why?					
4) Knowl	edge and informa	tion gained fron	n participation at thi	s event?		
				NI.	Somehow	
Met yo	ur expectations		Yes	No	Comenow	
-	ur expectations useful for you		Yes Definitely	Mostly	Somehow	Not at
• Will be	useful for you	orkshop could h		Mostly	Somehow	Not at
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THANK YOU!





VIMALA COLLEGE (AUTONOMOUS), THRISSUR

This is to certify that Mr./Ms./Dr./Prof._

Science, Technology and Environment (KSCSTE) during College, Thrissur and sponsored by Kerala State Council for EYE to SKY organized by the Department of Physics, Vimala has participated in the Science Popularization Workshop

Dr Malini K A Coordinator, EYE to SKY,

Dr Sr Marriette A Therattil Principal,