

॥ ज्ञानस्य निर्मलं नेत्रं ज्योतिष्यकमनुत्तमम् ॥

Jyotirvidya Parisanstha, Pune

(India's Oldest Amateur Astronomers' Association)

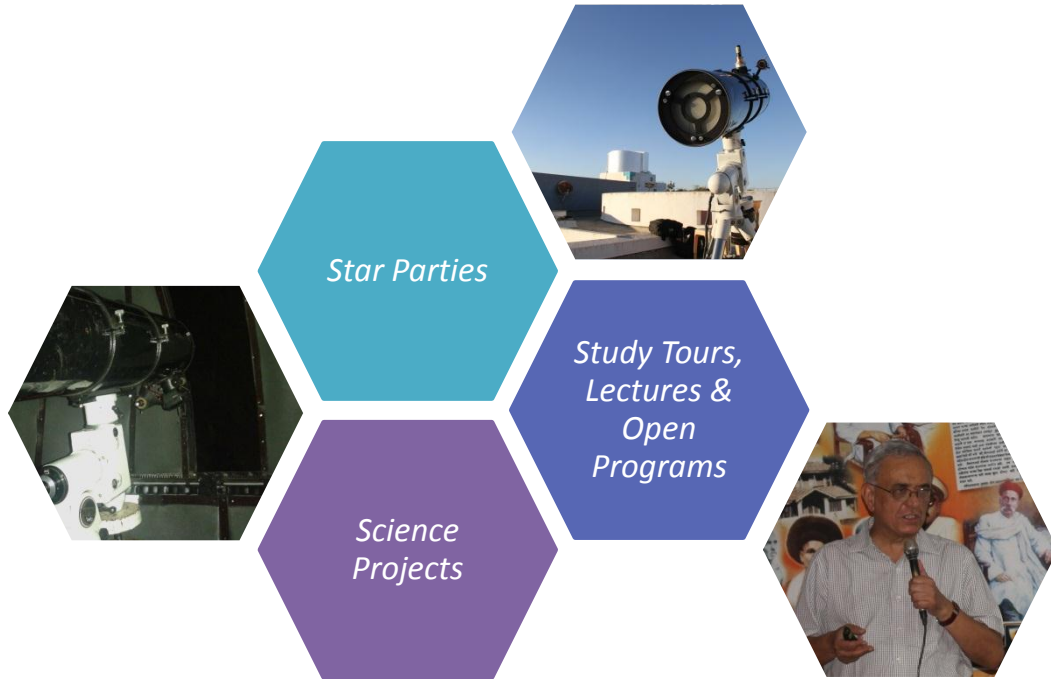
Foundation: 22 August 1944; Ganesh Chaturthi, Shak 1866



Year: 2014-15

71st Year

Annual Report



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Jyotirvidya Parisansta, Pune

2014-15 : 71st Year

Annual Report (April 2014 – March 2015)

The Governing Council of Jyotirvidya Parisansta is very pleased to put forward annual report of 71st year in the General Body Meeting. Parisansta made good progress in this year and we thank all the members of the Parisansta who made the programs a great success.

Governing Council for the year 2014-15

President	Mr. Mujtaba Lokhandwala
Vice President	Mr. Aniruddha Deshpande Mr. Deepak Joshee
Secretary	Dr. Sagar Gokhale
Treasurer	Ms. Aparna Kinkar
Executive members	Mr. Prabhakar Khole Mr. Shailesh Tilak Dr. Amod Rairikar Mr. Sameer Godbole Mr. Parimal Dave Mrs. Ketaki Dave Mr. Amit Kadlaskar Mr. Sumit Purohit Ms. Akanksha Devkar Mr. Milind Joshi Ms. Kalyani Date

Welcome the new members

In the year 2014-15, following number of people became members of Parisansta:

Life Members: 36

Annual Members: 332

WORK REPORT IN THE YEAR 2014-15

1. Libraries

Parisanstha has an astronomical book library for many years as well as telescope library from last three years. Presently book library has 159 Marathi books and 425 English books; issues of two periodicals, "Sky and Telescope" and "Astronomy". During the report year, Mr. Arvind Gupta from IUCAA presented 54 books to Parisanstha's library. In the telescope library, Parisanstha has made available five 4 inch and 6 inch telescopes and one small radio telescope for solar observations. In the report year, following members took efforts to maintain library: Mr. Siddharth Birmal, Ms. Sampada Nandurdikar, Mr. Mayuresh Wagh, Mr. Atharva Pathak, Mr. Omkar Gavali, Mr. Hari Shankar, Mr. Ramchandra Karanje, Ms. Harsha Kulkarni, Mr. Rugved Pund, Ms. Shruti Deshpande, Ms. Aparna Kinkar and Mr. Aniruddha Deshpande. The list of books in the library is made available on the JVP website. In the report year, regular members of book library were ten; whereas four members took benefit of the telescope library facility.

2. Basic Astronomy Course

This year Parisanstha conducted Basic Astronomy Course during 27th April to 17th May 2014 at Tilak Smarak Mandir. There were 53 participants in this course. It was inaugurated with a lecture by Prof. Ajit Kembhavi, Director, Inter University Center for Astronomy & Astrophysics (IUCAA). The course consisted of following lectures:

Date	Topic	Lecturer
27 th April 2014	Inauguration and Lecture on "Next Generation Telescopes in Astronomy"	Dr. Ajit Kembhavi, Director, IUCAA
28 th April 2014	History of Astronomy	Mr. Shekhar Phatak, Former President, Jyotirvidya Parisanstha
29 th April 2014	Time and astronomical measurements	Mr. V. V. Sovani, Former President, Jyotirvidya Parisanstha
1 st May 2014	Coordinate System and Panchang	Mr. V. V. Sovani, Former President, Jyotirvidya Parisanstha
2 nd May 2014	Phenomena in Astronomy	Mr. Suhas Gurjar, Former President, Jyotirvidya Parisanstha
3 rd /4 th May 2014	Overnight Observational Session at Pethe Farms	Mr. Deepak Joshee, Vice President, Jyotirvidya Parisanstha
4 th May 2014	Solar System	Dr. Sagar Gokhale, Secretary, Jyotirvidya Parisanstha
5 th May 2014	AstroSat, India's first multiwavelength satellite	Dr. Deepankar Bhattacharya, Professor, IUCAA
6 th May 2014	Simple Observations in Astronomy	Mr. Sameer Dhurde Science Popularization Officer, IUCAA
8 th May 2014	Amateur Radio Astronomy and use of ASRT	Dr. B.C. Joshi, Associate Professor, NCRA, TIFR

9 th May 2014	Astronomical Photography	Mr. Shekhar Phatak, Former President, Jyotirvidya Parisansta
10 th May 2014	Eclipses, Occultations and transits	Mr. Suhas Gurjar, Former President, Jyotirvidya Parisansta
11 th May 2014	Instruments in Astronomy	Mr. Parimal Dave, Executive committee member, Jyotirvidya Parisansta
12 th May 2014	Day Time Astronomy - You don't need to wait for the dark	Dr. Neeruj Mohan Ramanujam, Visiting Scientist, NCRA, TIFR
13 th May 2014	Amateur astronomers' help in Professional Astronomy	Dr. Varun Bhalerao, Post-Doctoral Fellow, IUCAA
15 th May 2014	Comets Meteors and Asteroids	Mr. Sarang Sahasrabudhe, Member, Jyotirvidya Parisansta
16 th May 2014	Cosmology – Beyond Solar System	Mr. Mujtaba Lokhandawala, President, Jyotirvidya Parisansta
17 th May 2014	Lecture on 'The Great Revolutions in Astronomy' and certificate distribution	Dr. Suresh Naik, Former Group Director- ISRO, President - International Space Society



Jyotirvidya Parisansta members, Mr. Atharva Pathak, Mr. Ramchandra Karanje, Mr. Omkar Gavali, Ms. Madhavi Patankar, Mr. Nilay Mokashi, Mr. Amit Kadlaskar, Mr. Parimal Dave, Mr. Sameer Godbole, Mr. Sarang Sahasrabudhe, Mr. Siddharth Birmal, Mr. Deepak Joshee, Mr. Aniruddha Deshpande, Mr. Hari Shankar, Mr. Rugved Pund, Mr. Sagar Gokhale, Ms. Sampada Nandurdikar and Ms. Aparna Kinkar helped in successful organization of the course.

3. Star Parties

As per yearly program, Parisanstha has organized monthly public star parties. The report of the same is as follows.

Date	Venue	Attendees
5 th April 2014	Pethe Farms, Near Nasarapur	60
18 th October 2014	Pethe Farms, Near Nasarapur	140
22 nd November 2014	Pethe Farms, Near Nasarapur	130
27 th December 2014	Pethe Farms, Near Nasarapur	105
24 th January 2015	Pethe Farms, Near Nasarapur	88
21 st February 2015	Gadgil Farms, Yavat	100
14 th March 2015	Gadgil Farms, Yavat	65

In general, the outline of programs was as follows:

6.00 pm to 7.00 pm	Introduction and Tea
7.00 pm to 8.00 pm	Telescopic viewing of planets, galaxies or nebulae
8.00 pm to 9.30 pm	Unaided eye stargazing (Introduction to constellations, stars and Nakshatras, etc.)
9.30 pm to 10.30 pm	Dinner
10.30 pm to 11.30 pm	Astro-movies
11.30 pm to 00.30 am	Slide show / introduction to planetarium software
00.30 am to 1.30 am	Telescopic viewing of planets, galaxies or nebulae
1.30 am to 2.30 am	Unaided eye star gazing
2.30 am to 3.00 am	Telescopic viewing of planets, galaxies or nebulae
3.00 am to 4.00 am	Astrogames
4.00 am to 4.30 am	Tea
4.30 am to 5.30 am	Unaided eye stargazing and Telescopic viewing of planets etc.



All these programs were successfully organized with the help of following members: Mr. Sarang Sahasrabudhe, Ms. Akanksha Devkar, Ms. Aparna Kinkar, Mr. Aniruddha Deshpande, Mr. Deepak Joshee, Mr. Parimal Dave, Mrs. Ketaki Dave, Mr. Omkar Gavali, Mr. Atharva Pathak, Mr. Nilay Mokashi, Mr. Milind Joshi, Mr. Mujtaba Lokhandwala, Mr. Suhas Gurjar, Mr. Hari Shankar, Ms. Amruta Pund, Ms. Monika Gundecha, Ms. Harsha Kulkarni, Ms. Shruti Deshpande, Mr. Siddharth

Birmal, Ms. Sampada Nandurdikar, Mr. Sameer Godbole, Mr. Amit Kadlaskar, Mr. Ramchandra Karanje, Miss. Madhavi Patankar.

In addition to these programs, following invitation star parties were conducted by Parisanstha:

Date	Invitee	Place	Attendance	Guide
11 th April 2014	Dr. Suresh Naik	Spring Fields, Pune	150	Atharva Pathak, Sampada Nandurdikar, Amruta Pund, Hari Shankar, Milind Joshi, Amod Rairikar, Sameer Godbole, Madhavi Patankar
14 th April 2014	Rotari Club, Pune	Panshet	57	Sahasrabudhe, Amruta Pund, Atharva Pathak
18 th April 2014	Sadhana Foundation	Sadhana Village, Paud	50	Suhas Gurjar, Sarang Sahasrabudhe, Atharva Pathak, Omkar Gavali
25 th April 2014	Butterfly Kids	Mahatma Phule Hall, Sinhgad Road, Pune	250	Sarang Sahasrabudhe, Atharva Pathak, Milind Joshi
10 th May 2014	SAS Company	Magarpatta City Amphitheatre, Pune	100	Sarang Sahasrabudhe, Parimal Dave, Atharva Pathak
16 th May 2014	Fun & Learn Activity Center	Aditya Garden City, Pune	100	Sarang Sahasrabudhe, Atharva Pathak
28 th October 2014	Akshar Nandan Nature Camp	Kurunji Village, Bhatghar Dam	40	Sarang Sahasrabudhe, Ramchandra Karanje, Omkar Gavali
15 th November 2014	Vidnyan Bharati	Kedgaon	140	Sarang Sahasrabudhe, Ramchandra Karanje, Akshay Joshi
28 th November 2014	Air Force School, Vimannagar	Air Force School, Vimannagar	330	Sarang Sahasrabudhe, Ramchandra Karanje, Atharva Pathak, Shruti Deshpande, Hari Shankar, Omkar Gavali, Harsha Kulkarni
9 th December 2014	NSS Camp, T. J. College of Arts and Commerce	Dehu	60	Deepak Joshee, Atharva Pathak, Ramchandra Karanje, Omkar Gavali
11 th December 2014	Identity Foundation (Tech Mahindra)	Pethe Farms, Pune-Satara Road	70	Sarang Sahasrabudhe, Atharva Pathak, Hari Shankar

12 th December 2014	Mary Memorial School, Daund	Kashti, Daund	110	Sarang Sahasrabudhe, Harsha Kulkarni, Shruti Deshpande, Hari Shankar, Omar Gavali
14 th December 2014 (Geminids Meteor shower)	Fergusson College	Shivapur	350	Ramchandra Karanje, Sarang Sahasrabudhe, Hari Shankar
16 December 2014	NSS Camp, Garware College	Manjai, Nasarapur	50	Deepak Joshee, Atharva Pathak, Ramchandra Karanje, Hari Shankar
8 th January 2015	Swarup Vardhini	Vishwakarma Vidyalay, Bibwewadi	90	Sarang Sahasrabudhe, Atharva Pathak, Omkar Gavali
12 th January 2015	NSS Camp, Indira College	Kondiwadi, Talegaon	100	Deepak Joshee, Atharva Pathak
19 th January 2015	Art of Living	Dnyan Prabodhini	65	Sarang Sahasrabudhe, Atharva Pathak, Ramchandra Karanje
30 th January 2015	K. J. College, Pune	K. J. College, Pune	200	Sarang Sahasrabudhe, Atharva Pathak, Aniruddha Deshpande, Suhas Gurjar
14 th February 2015	Sahyadri School	Wada, Near Chas Kaman Dam	60	Sarang Sahasrabudhe, Madhavi Patankar, Shruti Deshpande, Shubham Kulkarni
20 th February 2015	New English School, Ramanbag	New English School, Ramanbag	60	Deepak Joshee, Harsha Kulkarni, Siddharth Birmal
25 th February 2015	Urban Rural Management Empowerment & Establishment (URMEE)	ZP School, Jambhe, Punavale	170	Sarang Sahasrabudhe, Atharva Pathak, Shruti Deshpande
26 th February 2015	Urban Rural Management Empowerment & Establishment (URMEE)	ZP School, Kasarsai, Marunji	200	Sarang Sahasrabudhe, Atharva Pathak, Hari Shankar, Harsha Kulkarni
27 th February 2015	Urban Rural Management Empowerment and Establishment (URMEE)	ZP School, Bhoirwadi, Maan Village	200	Sarang Sahasrabudhe, Atharva Pathak, Hari Shankar, Monika Gundecha

20 th March 2015	Sahyadri School	Wada, Near Chas Kaman Dam	120	Sarang Sahasrabudhe, Hari Shankar, Shruti Deshpande, Swarali Avhad
20 th March 2015	G. G. International School	Wanowrie	35	Nilay Mokashi, Harsha Kulkarni, Akanksha Devkar



All the invited Star Parties were managed well by Mr. Sarang Sahasrabudhe.

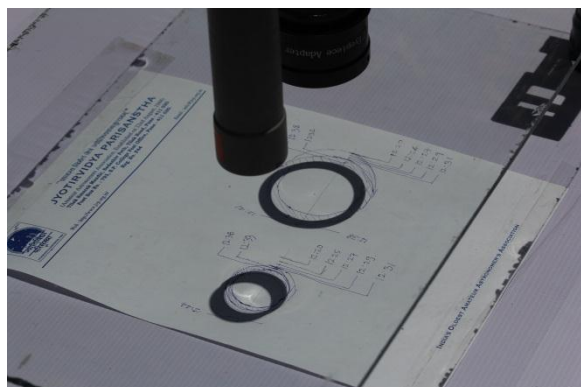
4. Planet shows and open programs

Since last few years, Parisanstha organizes free programs for citizens of Pune from Kesariwada. The programs organized in year 2014-15 were as follows:

Date	Event	Place	Visitors
3 rd -4 th April 2014	Mars at opposition	Kesariwada	700
24 th April 2014	24 th Birthday of Hubble Space Telescope	Kesariwada	100
14 th May 2014	Zero Shadow Day	Tilak Smarak Mandir	250
14 th May 2014	Saturn at opposition	Kesariwada	150
30 th November 2014	Brightest possible Iridium Flare	Gadgil Bridge (Z-Bridge)	70
16 th -17 th January 2015	Comet Lovejoy (C/2014 Q2)	Kesariwada	1300
7 February 2015	Jupiter at opposition	Kesariwada	400

Following members of Parisanstha volunteered to make these programs successful: Ms. Aparna Kinkar, Mr. Aniruddha Deshpande, Mr. Deepak Joshee, Mr. Parimal Dave, Mrs. Ketaki Dave, Mr. Omkar Gavali, Mr. Atharva Pathak, Mr. Milind Joshi, Mr. Hari Shankar, Ms. Amruta Pund, Mr. Amit Kadlaskar, Mr. Ramchandra Karanje, Ms. Bhumika Rathore, Ms. Sneha Chitre, Mr. Siddharth Birmal, Ms. Prajakta Khati, Ms. Shruti Deshpande, Mr. Sarang Sahasrabudhe, Ms. Harsha Kulkarni, Mr. Sushen Joshi, Mr. Nayan Kutwal, Ms. Sampada Nandurdikar, Mr. Shubham Kulkarni, Mr. Sameer

Godbole, Ms. Sakhi Bhure, Dr. Amod Rairikar, Mr. Rugved Pund, Master Adi Bhure, Ms. Rithika Deshmukh, Ms. Monika Gundecha, Ms. Madhavi Patankar.



Zero Shadow Day Program



Lovejoy Comet Show

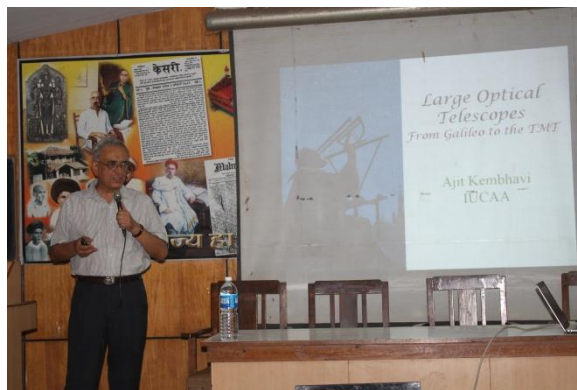
5. Lectures

In the year 2014-15, Parisanstha organized eight public lectures.

Date	Lecturer	Subject	Venue	Attendance
27 th April 2014	Prof. Ajit Kembhavi, Director, IUCAA	Next Generation Telescopes in Astronomy	Tilak Smarak Mandir – Basement Hall	60
28 th May 2014	Prof. Tom Field, Research Engineer, Windows	Spectroscopy with Amateur Telescopes	Bhaskara – 3 Hall, IUCAA (Webinar)	70
22 nd June 2014	Mr. Sameer Godbode, Member, JVP	Geomagnetic Observatory at Alibaug	Tilak Smarak Mandir – Basement Hall	50
13 th July 2014	Prof. A. N. Ramprakash, Head, Instru. Lab, IUCAA	Science of Light	Tilak Smarak Mandir – Basement Hall	70
30 th July 2014	Dr. B. S. Shylaja, Director, Bangalore Association for Science Education, Nehru Planetarium	Stone inscriptions, in South India, as sources of astronomical records	Tilak Smarak Mandir – Basement Hall	60
20 th November 2014	Prof. P. K. Ghanekar, Former Professor, Garware College	Impact Crater of Lunar	Tilak Smarak Mandir – Basement Hall	150
14 th December 2014	Ms. Sneha Rode, Former Geological Scientist, ISRO; Member, JVP	Geological importance of Lunar Impact Crater	Tilak Smarak Mandir – Basement Hall	60
22 nd March 2015	Dr. Durgesh Tripathi, Scientist, IUCAA	Journey to Our Star – The Sun	Tilak Smarak Mandir – Basement Hall	67



Lecture by Dr. A. N. Ramprakash



Lecture by Dr. Ajit Kembhavi



Webinar with Prof. Tom Field



Lecture by Prof. P. K. Ghanekar

6. Study Tours

Following study tours were conducted by Parisanstha this year.

Date	Place	Participants	Guidance by
25 th May 2014	GMRT & IGO	71	Mr. J. K. Solanki, Mr. Arvind Paranjapye
6 th July 2014	Nehru Planetarium	58	Mr. Arvind Paranjapye
27 th -28 th December 2014	Lonar Impact Crater	42	Mr. Bugdane, Lonar

During the tour to Khodad & Girawali, participants visited Giant Meterwave Radio Telescope (GMRT) at Khodad and IUCAA Girawali Observatory (IGO) at Girawali. Mr. J. K. Solanki and Mr. Divya Oberoi of GMRT explained working of Radio telescope, radio imaging etc. to the participants; whereas Mr. Arvind Paranjapye explained the working and imaging with 2 metre telescope at IGO.

During visit to Nehru planetarium at Worli, participants visited planetarium as well as science center. Director of Planetarium, Mr. Arvind Paranjapye guided the participants during the visit.

In Lonar study tour, participants visited places like Sharangadhar Mandir at Mehekar, Lonar main crater, temples in the crater, Dharatirtha Mandir, Daityasudan Mandir, Ambar crater, Sleeping Hanuman temple, etc. Bugdane Sir shared the scientific information about these places. Participants

also studied magnetic stones formed due to meteorite impact, highly salty water in the Lonar Lake and biodiversity in the crater.



Efforts taken by Mr. Amit Kadlaskar for organization of these study tours are highly appreciated. Also following members supported him in the organization: Mr. Atharva Pathak, Mr. Sarang Sahasrabudhe, Mr. Omkar Gavali, Mr. Aniruddha Deshpande, Ms. Aparna Kinkar and Ms. Sampada Nandurdikar.

7. Astronomical Exhibitions

In the report year, Parisansta organized/participated in following exhibitions:

Optical Observatories – Infinity Focused with Giant Eye

Jyotirvidya Parisansta organized an exhibition on “Optical Observatories – Infinity Focused with Giant Eye”. Exhibition was held during 19th-21st September 2014 at Jawaharlal Nehru Cultural Center, Opposite Mahatma Phule Museum, Ghole Road. The main aim of the exhibition was to introduce astronomical observatories with big telescopes, to general public. Around 2500 people visited this exhibition.





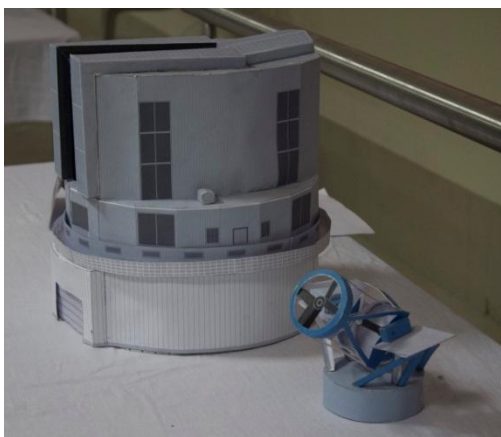
Astronomical observatories have history of thousands of years. Before discovery of telescopes, observatories consisted of unaided eye instruments like one at Jantar Mantar. In 1609, Galileo Galilei used telescope for astronomical observations for the first time. Since then techniques of astronomical observations changed significantly and telescopes became larger and advanced. This exhibition showcased how different observatories – from Jantar

Mantar to Thirty Meter Telescope Observatory – work and how small observatories of amateur astronomers work etc.

Following models were exhibited at this exhibition: 1) Samrath Yantra, Ram Yantra, Chakra Yantra and Nadiwalay Yantra at Jantar Mantar 2) Parisanstha’s Galilean and Newtonian telescopes 3) Different types of mounts and domes for large telescopes 4) IUCAA Girawali Observatory 5) Thirty Meter Telescope 6) Subaru Observatory 7) Giant Magellan Telescope 8) Large Binocular Telescope. Posters and short films were also displayed in the exhibition. Model of “Thirty Meter

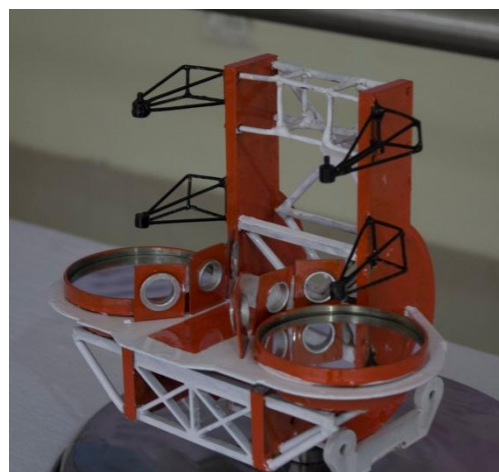


Telescope Observatory”, in which India is one of the major participants, became main attraction of the exhibition.



Volunteers worked really hard through whole August and September to make models and posters. Following members of Parisanstha worked very hard to make this exhibition a big success: Dr. Sagar Gokhale, Mr. Atharva Pathak, Mr. Hari Shankar, Mr. Ramchandra Karanje, Mr. Omkar Gavali, Mr. Siddharth Birmal, Ms. Rethika Deshmukh, Ms. Shruti

Deshpande, Ms. Shruti Patekar, Ms. Harsha Kulkarni, Mr. Akshay Joshi, Ms. Swarali Avhad, Mr. Amit Kadlaskar, Mr. Sarang Sahasrabudhe, Mr. Nilay Mokashi, Ms. Ketaki Dave, Mr. Parimal Dave, Ms. Akalpita Kinkar, Ms. Renuka Kulkarni, Ms. Madhavi Patankar, Ms. Akanksha Devkar, Ms. Sampada Nandurdikar, Mr. Chinmay Ekbote, Master Atharva Pathak, Ms. Shalaka Godbole, Ms. Vidya Godbole, Ms. Amruta Pund, Ms. Sakhi Bhure, Ms. Bhumika Rathore, Ms. Prajakta Khaty, Ms. Nupur



Puranik, Ms. Nandini Shiralkar, Mr. Mandar Naravane, Mr. Milind Halbe, Ms. Monika Gundecha, Mr. Chaitanya Pattewar, Mr. Sumit Purohit, Master Adi Bhure, Mr. Hrishikesh Salwekar, Mr. Vishwajit Anjali, Mr. Milind Joshi, Mr. Mangesh Karandikar, Mr. Mayuresh Wagh, Dr. Amod Rairikar, Mr. Sameer Godbole, Ms. Aparna Kinkar, Dr. Prakash Tupe, Mr. Deepak Joshi, Mr. Aniruddha Deshapande, and Mr. Mujtaba Lokhandwala.



Mars Mission of India

In the report year, India's 'Mars Orbiter Mission', Mangalyan reached Mars. On this occasion, Vijnana Bharati, Jyotirvidya Parisansta and Fergusson College jointly organized an exhibition, "Mars Mission of India" at Fergusson College; from 24th to 26th September 2014. Aim of the exhibition was to educate the people regarding India's Mars Mission and compare it with Mars Missions of other nations. Prof. Pramod Kale (Former Director, Space Application Center and Vikram Sarabhai Space Center) inaugurated this exhibition. On this occasion, Dr. Suresh Naik (Former Group Director, ISRO), Dr. R. G. Pardeshi (Principal, Fergusson College), Prof. Mujtaba Lokhandwala (President, Jyotirvidya Parisansta) and Mr. R. V. Kulkarni (President, Vijnana Bharati) were also present. Following models



were exhibited in this exhibition: Mars Reconnaissance orbiter, Mars Express, Mars Path Finder-Sojourner, Mars science lab, MPL cruise, Spirit and opportunity, Viking, Mangalyan, PSLV rocket for Mangalyan. Landing stages of Curiosity Rover and working model of Curiosity Rover roaming on artificial Martian surface were attractions of the exhibition. Around 2000 citizens and students visited this exhibition. Following members of Parisansta took efforts to make this exhibition successful: Mr. Hari Shankar, Mr. Deepak

Joshee, Mr. Aniruddha Deshpande, Mr. Atharva Pathak, Mr. Ramchandra Karanje, Ms. Harsha Kulkarni, Ms. Shruti Deshpande, Ms. Shruti Patekar, Ms. Swarali Avhad, Ms. Monika Gundecha.



Mega Projects of IUCAA

We celebrate National Science Day on 28th February. On this occasion, IUCAA organized an open program for general public and invited Jyotirvidya Parisanstha members to guide the visitors. On this occasion, Parisanstha exhibited posters and models related to “Mega Projects of IUCAA”. Following projects were explained over there: 1) AstroSat: multi-wavelength astronomical satellite by ISRO 2) Thirty Meter Telescope (TMT) being built at Hawaii 3) Laser Interferometer Gravitational wave Observatory (LIGO) 4) South African Large Telescope (SALT) 5) IUCAA Girawali Observatory. On the occasion of National Science Day, Parisanstha exhibited models of AstroSat and Thirty Meter Telescope, as well as informative



posters of the same. Around 4000 people visited the program. For organization of this exhibition, following members worked hard: Mr. Hari Shankar, Ms. Monika Gundecha, Mr. Atharva Pathak, Mr. Omkar Gavali, Mr. Parimal Dave, Ms. Rethika Deshmukh, Ms. Shruti Deshpande, Ms. Prajakta Khaty, Ms. Harsha Kulkarni, Ms. Sneha Chitre, Mr. Siddharth Birmal, Mr. Mayuresh Wagh, Mr. Amod Rairikar and Mr. Aniruddha Deshpande.

8. Other Programs

- On 5th July 2014, Dr. Ratnashree Nandiwada, Director, Nehru Planetarium, Delhi communicated with Parisanstha Members through Google Hangout and explained to them the working of different Yantras at Jantar Mantar.
- India is one of the participating countries in the project Thirty Meter Telescope (TMT) at Hawaii. Outreach meet for the same was held at IUCAA on 31st July 2014. Outreach heads for the project, Dr. Gordon Squires and Ms. Jenesse were present for this meet. Jyotirvidya Parisanstha was invited to this meet to share information on activities of amateur astronomers in India and also the activities of Parisanstha. Following members participated in this meet: Mr. Deepak Joshee, Mr. Aniruddha Deshpande, Mr. Suhas Gurjar and Mr. Mujtaba Lokhandwala. Parisanstha presented a scale model of Thirty Meter Telescope to IUCAA on this occasion.



- Members' star party was organized on 11th October 2014 at Bhukum, in order to train members to conduct sky show session. Following members participated in the session: Ms. Harsha Kulkarni, Ms. Monika Gundecha, Ms. Renuka Kulkarni, Ms. Sampada Nandurdikar, Mr. Amod Rairikar, Mr. Chinmay Ekbote, Mr. Ramchandra Karanje, Mr. Aniruddha Deshpande, Ms. Aparna Kinkar and Mr. Milind Joshi. Mr. Sarang Sahasrabudhe guided the participants.
- Mr. Aniruddha Deshpande and Mr. Prakash Tupe of Parisanstha were invited to deliver a lecture at Vidya Pratishthan, Baramati on 9th January 2015.
- Astronomical Society of India (ASI) organized an online interactive session through Facebook, for amateur astronomers across India in order to introduce each other with activities of associations across India. This session was held on 11th January 2015. Parisanstha members Mr. Deepak Joshee, Mr. Aniruddha Deshpande, Mr. Sarang Sahasrabudhe and Mr. Atharva Pathak participated in the event.
- COEP Astronomy Club organized a quiz competition, called, "Quiztronomy" on 1st February 2015. Mr. Sarang Sahasrabudhe and Ms. Shruti Deshpande participated in this quiz and secured third prize.

- NCRA (National Center for Radio Astronomy) organized an event called, “Pune Astronomy Fortnight” during 1st to 15th February 2015 around the city of Pune. This was an outreach activity for students and citizens of Pune. During the event, Parisanstha participated in the activity on 8th February at Kamala Nehru Park; where Parisanstha displayed posters on “Astronomical Observatories in India” and models of Ram Yantra and Samrath Yantra at Jantar Mantar. Parisanstha members, Mr. Sarang Sahasrabudhe, Mr. Aniruddha Deshpande, Mr. Atharva Pathak, Mr. Ramchandra Karanje, Mr. Shubham Kulkarni, Mr. Amit Kadlaskar, Ms. Aparna Kinkar, Ms. Shruti Deshpande, Ms. Prajakta Khaty, Ms. Sneha Chitre, Ms. Manali Jeste, Ms. Madhavi Patankar, Ms. Sampada Nandurdikar participated in the program. Dr. Niruj Mohan Ramanujam of NCRA organized this event.



- Dr. Ratnashree Nandiwada, Director, Nehru Planetarium, Delhi conducted a session on calibration of Samrath Yantra at IUCAA with the help of school students in Pune. This was carried out in February 2015. Parisanstha members, master Adi Bhure, Ms. Nandini Shiralkar and Ms. Prajakta Khaty participated in this activity.
- A conference on “Space Vision - 2020” was conducted at Vellore between 13th & 14th March 2015. Mr. Mujtaba Lokhandwala, President, Jyotirvidya Parisanstha delivered lecture on “Contribution of Amateur Astronomers” during this conference.
- Michel Linnolt, a variable star observer from USA contacted Jyotirvidya Parisanstha and proposed a collaborative project with Parisanstha on variable star observation. In this regard, discussions are going on with Dr. Stella Kafka, Director, American Association of Variable Star Observers (AAVSO). This project may start next year.

9. Social networking

- Mr. Sagar Gokhale maintained website of Parisanstha (www.jvp.org.in) regularly throughout the year.
- Parisanstha started using a mobile app viz. Whatsapp to communicate with members and share with them the information about programs of Parisanstha. Mr. Sarang Sahasrabudhe and Mr. Deepak Joshee carry out this activity. A Google Group has also been formed to communicate with members regarding programs of Parisanstha.

- On the community site Facebook, Parisanstha runs a group named “JVP ज्योतिर्विद्या परिसंस्था” and a page named “Jyotirvidya Parisanstha”. This group and a page are very active and regular discussions occur in the group on various activities of Parisanstha and various astronomical events. There are more than 1800 members of group, “JVP ज्योतिर्विद्या परिसंस्था”

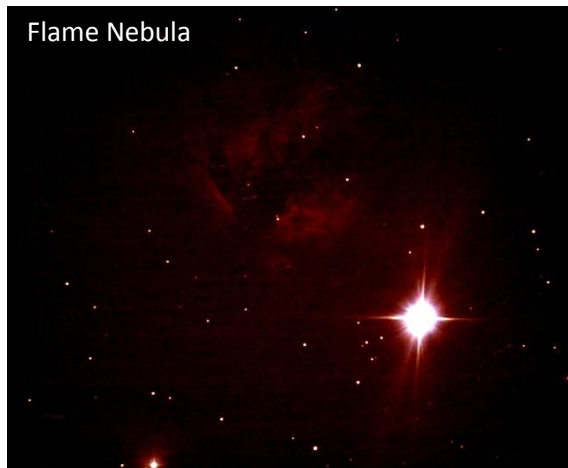
10. Astrophotography

An astrophotography session was conducted at Hatve village, Taluka Velhe, District Pune between 17th & 18th November 2014. Photographs were taken through Parisanstha’s 10 inch reflector, 8 inch dobsonian reflector and 6 inch refractor telescopes. Following objects were photographed during this session: NGC 253, M52, Crab Nebula, Ring Nebula, Horsehead Nebula, Orion Nebula, Flame Nebula, M33, M29, Pleiades cluster, Milky Way, Dumbbell Nebula, constellations, star trails. Following



Dumbbell Nebula

members of Parisanstha participated in this event: Mr. Deepak Joshee, Mr. Atharva Pathak, Mr. Nilay Mokashi, Ms. Akanksha Devkar, Ms. Shruti Patekar, Ms. Harsha Kulkarni, Ms. Sampada Nandurdikar, Ms. Monika Gundecha, Mr. Mandar Naravane, Ms. Manali Jeste, Mr. Yogesh Korde, Mr. Mohan Kumar, Mr. Milind Joshi, and Mr. Ramchandra Karanje.



Flame Nebula

On 21st December 2014, few members carried out photography session from Paud, District Pune and Sinhagad, District Pune. Photographs were taken through 8 inch dobsonian reflector telescope. Following objects were photographed during this session: Orion Nebula, Crab Nebula, Flame Nebula, Horsehead Nebula, Bode Galaxy, Cigar Galaxy, Sun, satellite passes. Following members participated in this session: Mr. Atharva Pathak, Mr. Milind Joshi,

Mr. Omkar Gavali and Mr. Mandar Naravane.

11. Jyotirvidya Kesariwada Observatory report

Parisansta's 10" telescope is installed at Kesariwada and we conduct various scientific observations using the telescope and Canon 7D setup. Following observations were conducted in the report year:

Date	Object	Imaging Instrument	Remarks
15 th April 2014	NSV_16755 in Gemini	ST-9	Variable Star Observation
2 nd August 2014	Comet 2012k1 Panstarrs	Canon 7D	Photography
14 th October 2014	Comet Siding Spring (C2013A1)	Canon 7D	Photography
1 st November 2014	Ngc 6760	Canon 7D	Photography
11 th November 2014	Asassn-14	Canon 7D	Variable Star Observation
29 th November 2014	Malbar asteroid	Canon 7D	Asteroid Movement
8 th January 2015	β - Persei	Canon 7D	Nova Observations
14 th January 2015	Comet Lovejoy (C/2014 Q2)	Canon 7D	Photography
21 st January 2015	IN Cnc	Canon 7D	Variable Star Observation
6 th February 2015	AC Tau	Canon 7D	Variable Star Observation



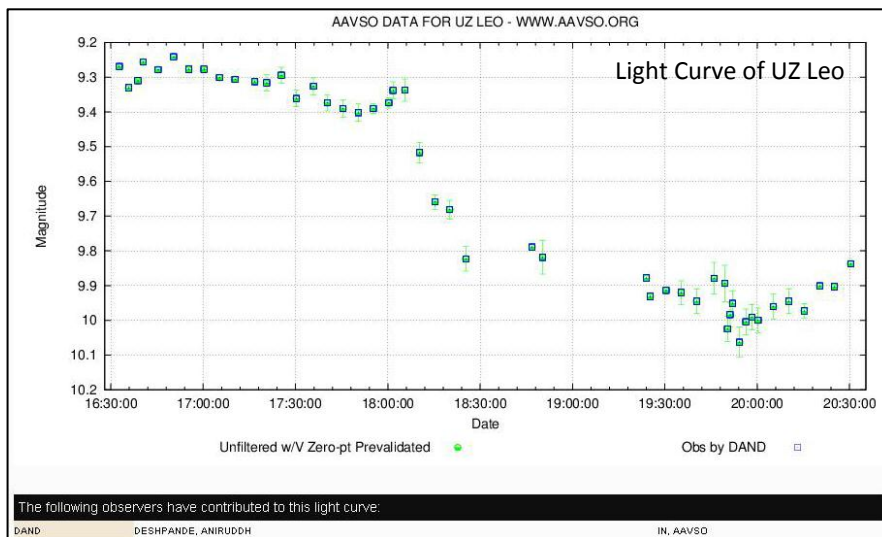
Since Kesariwada is located in the heart of the city, this area is highly light polluted. This was causing some errors to be introduced in the variable star observations. To rectify these errors, Parisansta executed an important project of building a dome for the telescope. Construction of dome was completed in March 2015 and test observations were taken during 8th to 12th March 2015. Preliminary observations showed that errors in variable star observations were reduced because of dome. Mr. Aniruddha Deshpande, Mr. Milind Kelkar, Mr. Deepak Joshee and Mr. Suhas Gurjar worked on dome design and construction.



After completion of dome, following observations were conducted:

Date	Object	Imaging Instrument	Remarks
13 th March 2015	UZ Leo	Canon 7D	Variable Star Observation
18 th March 2015		Canon 7D	Sky Survey
24 th March 2015	UZ Leo	Canon 7D	Variable Star Observation

Following members participated in observations at Kesariwada Observatory: Mr. Aniruddha Deshpande, Mr. Deepak Joshee, Mr. Atharva Pathak, Mr. Ramchandra Karanje, Mr. Omkar Gavali, Mr. Mandar Naravane, Mr. Rugved Pund, and Ms. Harsha Kulkarni.

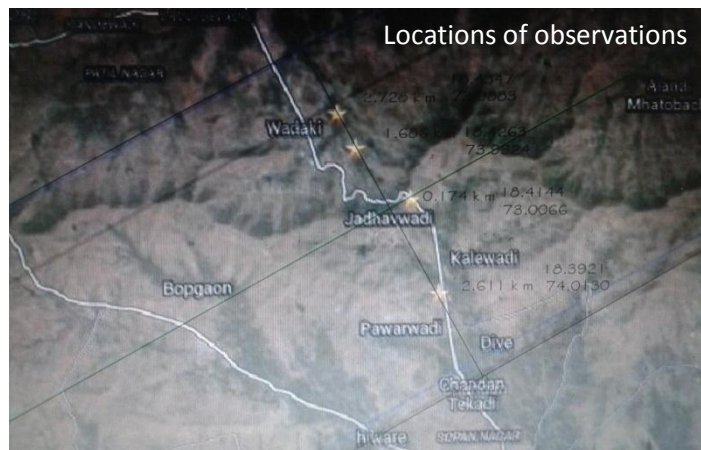


Parisansta’s member and student of Fergusson College, Ms. Swarali Awhad completed her B.Sc. project on Variable Stars at Kesariwada Observatory. Mr. Deepak Joshee guided her for the project.

Mr. Abhay Dasharath of Jalana University is working on “Suspected Variable Stars” for his Ph.D. research. He had requested Parisanstha to conduct observations of variable stars. In the report year, these observations were conducted at Kesariwada observatory.

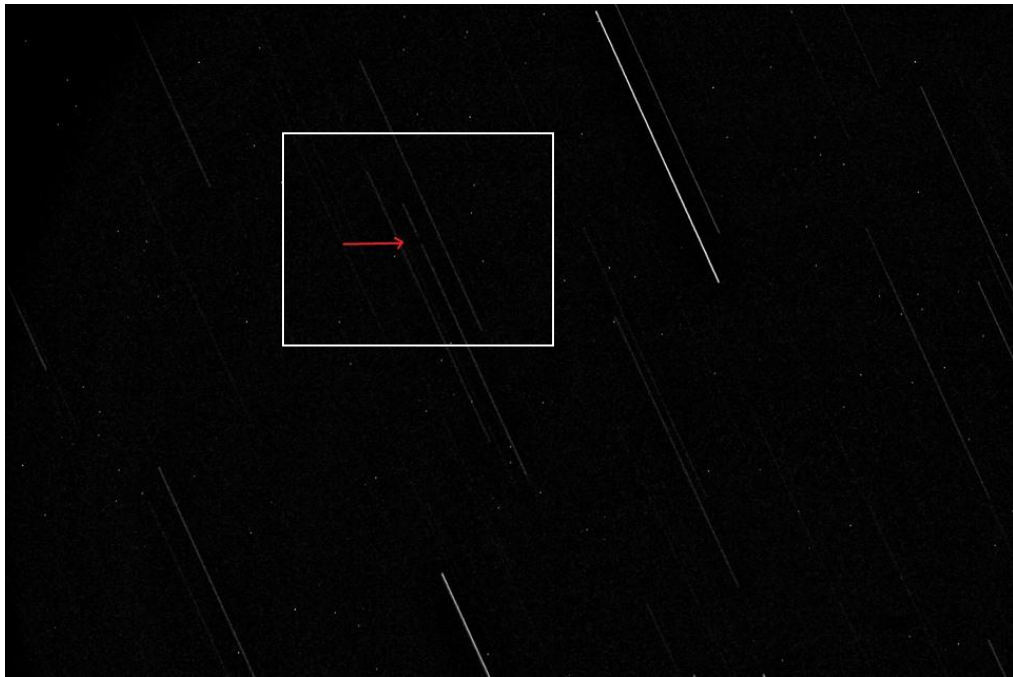
12. Observational projects

- Parisanstha’s members, Mr. Ramchandra Karanje and Mr. Nilay Mokashi were selected for a project on “Commissioning of 15 meter Radio Telescope” at National Center for Radio Astronomy (NCRA). They carried out calibration of the 15 m radio telescope using standard radio sources like Crab Nebula, Cygnus A, Virgo A. They also found out pointing accuracy and also errors and deviations in the observations. Dean of NCRA, Dr. Jayram Chengalur and radio scientist, Dr. Niruj Mohan Ramanujam guided Mr. Karanje and Mr. Mokashi for the project.
- Asteroid Occultation:** On 10th December 2014, an asteroid, Bobrovnikoff occulted the star, TYC 1766-01017-1. In order to know size and shape of the asteroid, Parisanstha planned observations of this occultation from five different places near Nasarapur-Rajgad base area. One of the five teams succeeded in conducting successful observations. The five observation locations were as follows:



Sr. No.	Latitude and Longitude of location	Observers	Instruments	Comments
1	18.43442, 73.98815	Mr. Deepak Joshee, Mr. Rugved Pund, Mr. Mandar Naravane, Mr. Chinmay Ekbote, Mr. Hari Shankar	10 inch reflector telescope, Canon 7D Camera	Occultation could not be observed
2	18.4146, 74.0058	Mr. Aniruddha Deshpande, Mr. Omkar Gavali, Mr. Atharva Pathak	6 inch refractor telescope, Canon 60D Camera	Occultation could not be observed
3	18.3899, 74.0138	Mr. Ramchandra Karanje, Ms. Harsha Kulkarni, Mr. Sushen Joshi	8 inch reflector telescope, Canon 5D Camera	Successful observation of occultation
4	18.4205, 73.9051	Mr. Suhas Gurjar, Ms. Akanksha Devkar, Ms. Madhavi Patankar	16 inch reflector telescope, Canon 550D Camera	Occultation could not be observed
5	18.4205, 73.9051	Mr. Nilay Mokashi, Mr. Milind Joshi	12 inch telescope, Canon 600D camera	Occultation could not be observed

In order to find distance of asteroid using parallax, Parisanstha contacted with Mr. Vikrant Kumar Agnihotri (Kota, Rajasthan) and requested him to conduct observation of occultation. But he couldn't observe the phenomenon due to of bad weather.



Photograph of asteroid occultation
(where the star trail is discontinued, star is occulted for that much time)

- On 13th December 2014, Parisanstha members along with students of different engineering colleges observed Geminids meteor shower from Velhe, District Pune. 19 members and students observed meteor shower in scientific ways. Each one observed average 50 meteors or more in a night. Following members of Parisanstha participated in the activity: Mr. Atharva Pathak, Mr. Ramchandra Karanje, Mr. Omkar Gavali, Mr. Hari Shankar, Mr. Sarang Sahasrabudhe, Mr. Siddharth Birmal, Ms. Harsha Kulkarni, Ms. Shruti Deshpande.
- Messier Marathon: Parisanstha members participated in Messier Marathon this year on 21st/22nd March 2015. The event was conducted at Kolambi village, Taluka Velha, District Pune.



Following members participated in the marathon:

Sr.	Name	Instrument	Number of Messier objects observed
1	Mr. Atharva Pathak	8 " Dobsonian + 10 x 50 Binoculars	103
2	Mr. Hari Shankar	6 " Reflector + 10 x 50 Binoculars	101
3	Mr. Parimal Dave	10 " Meade SCT + 10 x 50 Binoculars	83
4	Mr. Shubham Kulkarni	6" Newtonian reflector	60
5	Ms. Ketaki Dave	3" self-made refractor + 10 x 50 Binoculars	41
6	Mr. Manish Khurpade	6" Celestron SCT	22
7	Mr. Ramchandra Karanje	6 " Refractor + 10 x 50 Binoculars	Being first timers for Messier observation - they learnt how to set deep sky objects. Collectively they observed approximate 15 - 20 objects on their own using Sky Atlas 2000
8	Ms. Harsha Kulkarni	4" Newtonian reflector	
9	Ms. Swarali Awhad	4" Newtonian reflector	
10	Ms. Shruti Deshpande	4" Newtonian reflector	
11	Mr. Gaurav Babar	10 x 50 Binoculars	
12	Mr. Abhijit Waghmare	5" Newtonian reflector	
13	Ms. Akanksha Vartak	5" Newtonian reflector	
14	Ms. Krina Vora	5" Newtonian reflector	
15	Mr. Mihir Gilbile	5" Newtonian reflector	
16	Ms. Pranjal Chaudhari	10 x 50 Binoculars	

Governing council takes this opportunity to thank following members and personalities:

- Mr. Shailesh Tilak permitted to set up observatory facility at Kesariwada and made available the terrace of Kesariwada new building free of charge. Additionally, Kesariwada terrace, Tilak Smarak Mandir premises were made available free of charge for open programs. We are thankful to him for this valuable help.
- Ms. Aparna Kinkar looked after office activities and financial activities very well throughout the year. Also Mr. Siddharth Birmal, Ms. Harsha Kulkarni and Mr. Atharva Pathak helped for stock taking of the Parisansta. We are thankful to them.
- All the public star parties as well as invited star parties of Parisansta were managed well by Mr. Sarang Sahasrabudhe. He was also helpful in the open programs of Parisansta. We are thankful to him.
- Mr. Amit Kadlaskar organized all the study tours single handedly. We are thankful to him as well.
- Dr. Amod Rairikar helped a lot for telescope maintenance over the year.
- Mr. Deepak Joshee made available his Canon 7D and Canon 5D cameras for observatory setup. We are thankful to Mr. Deepak Joshee.
- Mr. Milind Kelkar helped a lot for making the model of Thirty Meter Telescope, which was presented to IUCAA; and also for construction of dome for Kesariwada observatory. We are thankful to Mr. Kelkar.
- Mr. Arvind Gupta of IUCAA presented 54 books to Parisansta's library. We are thankful to him as well as to IUCAA for this.

- We are thankful to Mr. Arvind Paranjpye, Mr. Bugdane, Mr. Jay Solanki and Mr. Divya Oberoy for their guidance during the study tours.
- We are thankful to Mr. Madhav Gokhale for providing appropriate publicity to Parisanstha's programs in 'Sakal' daily.

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