SPACE Group in 2015

- SPACE Clubs and Workshops were appreciated highly by clients
- SPACE Foundation conducted public Outreach events and participated in Conferences
- New workshops including ones celebrating the International Year of Light were released
- Astroport opened its facilities to the public
- Center for Student Excellence enrolled new members and conducted many exciting sessions
- Astrotourism launched Family Tours
- Outreach events were conducted successfully over 3 cities and a large number of participants
- LEO Planetaria demonstrated models at many workshops around the country
- Partners in Ludhiana and Chennai conducted many clubs and outreach programmes for schools and public
- SPACE Arcade improved it’s sales greatly through online sales forums
“Thank you to SPACE for inspiring the next generation of explorers! They have great things to accomplish and your contributions to their education has provided the base! Congratulations!” – Captain Sunita Williams, NASA Astronaut of Indian Origin, at Fireside Chat with SPACE, Feb 2016

SPACE Group

SPACE Group was formed in 2001 with the aim of changing science and astronomy education and the edutainment landscape in the world, through path breaking and innovative concepts, services and programs.

SPACE Group has combined business with the noble and philanthropic cause of science education and popularisation, as we truly believe that businesses should work in the larger interest of the society, as social and scientific development leads to development of mankind at large.

THE SPACE GROUP HAS COME A LONG WAY SINCE IT’S INCEPTION. HERE IS A SNAPSHOT OF ITS ACHIEVEMENTS ACROSS ALL IT’S WINGS, IN 2015
“Teachers should encourage the students and children to ask questions and develop the spirit of enquiry, so that they blossom into creative enlightened citizens” –

Late Dr. APJ Abdul Kalam, Former President of India, Congratulating SPACE during Heliodysssey

The following companies, each with distinct offerings, comprise the SPACE Group

- SPACE Foundation is a non-profit society working for Science popularisation & Mass awareness.

- SPACE Technology & Education runs hands-on astronomy & space science based education, consultancy and training services. The Educational Programme is now running in 3 cities – Delhi, Ludhiana and Chennai. This report will address the following products:
  - Clubs and Workshops
  - Center of Science Excellence Program
  - Outreach Events
  - Partner Offices

- Astro Tourism India Pvt Ltd is the tourism wing of the group. It engages in tourism services, adventurous expeditions for astronomy enthusiasts.

- Astroport is an Astronomy and Space experience centre and retreat offering the pleasures of night sky viewing combined with resort facilities and entertainment

- Gnomon Astrotech Pvt Ltd market the products researched & developed by SPACE, like Astronomy Games, Gadgets, Educational Aids, Telescopes and lot more.

- Leo Planetaria manufactures digital planetarium & software for fixed and mobile platforms.
SPACE TECHNOLOGY AND EDUCATION

SPACE stands for innovation and passion towards the popularization of Astronomy among all. SPACE offers customisable products and services aimed at making science learning hands-on, exciting and fun. The company’s exclusive offerings range from Science in education to recreational science solutions in Astrotourism. These are further enhanced by our Outreach programmes. SPACE offerings are now in place in 3 cities.

EDUCATION ➤ ASTRONOMY CLUBS

SPACE has successfully implemented astronomy and space science curriculum in Indian education system through Space Astronomy Club for schools in India. This aims to teach students life skills through the intelligent application of astronomy concepts. Space Club’s ‘out of the box’ activities (like outdoor trips, workshops, hands-on activities) inculcate scientific temper & the love for science and environment amongst the students.

The 2 modules – ‘Fun with the Universe’ and ‘Exploring the Universe’ are beginner and advanced level programmes based on concepts of Astronomy with many exciting sessions.
CLUBS - 2015 ACHIEVEMENTS

The year 2015 has been a great year for the growth of Space Clubs:

- 3400 students from 91 different schools of Delhi NCR opted for the club.
- 600 students enrolled for Module 02 of the club

Sessions and Clubs conducted in the academic year 2015 include:

- A total of 800 club sessions were conducted in the schools out of which about 640 sessions were conducted for Module 01 and 160 sessions for Module 02.
- This includes a mix of 650 day time astronomy sessions, 130 evening observations and 100 overnight observations.

Feedback on Club Sessions:

“It gave me a chance to observe night sky which we don’t get otherwise” - School Teacher, Amity International School, Sector-46 Gurgaon on Hands On Telescope

“The program created curiosity among children and they were involved in star gazing” - Ms Mamta Bharadwaj, School Teacher, Sri Ventakeshwara International School, Dwarka on Hands On Telescope

“It was fantastic. My God! So much of fun and learning, where was all this at our time?? Keep doing this wonderful work as I believe that this learning will stay with them for life.” - Ms Indira Kohli, School Principal, Delhi Public School, Sector-132 Noida on Astronomy Day
SPACE Explorer workshop is a collection of one day programs which focus on teaching Space Science and Astronomy to students through practical hands on experience. The students get an out of textbook learning experience, which help them develop knowledge as well as life skills. Group activities inculcate team work and critical thinking skills.
WORKSHOPS - 2015 ACHIEVEMENTS

In 2015, a large number of Space Explorer Workshops were held

- 50 different schools of Delhi/NCR joined
- Opted for more than 300 workshops.

SPACE in its tradition of innovation came up with several new workshops in 2015

- Earth’s Eye: Exploring the findings of the Hubble mission through a 3D movie.
- Lunar Settlement: Explore the issues faced by humans to settle on moon, by designing a grand lunar settlement which could be our home for the next few years.
- Window to the Universe: Through various playful activities using modern mechanic tools, they learn about unique properties and physical appearance of celestial objects.

TO CELEBRATE THE INTERNATIONAL YEAR OF LIGHT, LIGHT RELATED WORKSHOPS WERE INTRODUCED

OUTREACH FOR STUDENTS OF ASSOCIATED SCHOOLS

The experience of Club and Workshop students was further enhanced by participation in highly reputed National and International Outreach Programmes, such as All India Asteroid Search Campaign, ISS EarthKam, and Project Paridhi etc which exposed them to real science and bagged awards and distinctions for participants and schools.
EDUCATION ➤ CENTER FOR STUDENT EXCELLENCE (CSE)

CSE is a unique model that popularizes Astronomy and Space science through a curriculum-based educational program, accompanied by workshops, field trips, competitions, and Outreach events.
In 2015, the number of schools who are our distinguished members grew to 10 in number! The schools include:

- GD Goenka Public School, Rohini Sector-22
- GD Goenka Public school, Dwarka
- Indraprastha International School, Dwarka
- GD Goenka Public School, Sarita Vihar
- The Indian heights School, Dwarka
- Indraprastha World School, Paschim Vihar
- GD Goenka Public school, Gurgaon
- Bal Bharati Public school, Pitampura
- GD Goenka Public School, Rohini sector-9
- GD Goenka Public School, Ghaziabad

**OUTREACH EVENTS**

CSE Schools enthusiastically took part in a record number of SPACE outreach events:

- Global Astronomy Month – All CSE schools conducted events
- World Space Week - 130 events were registered by CSE schools
- All India Asteroid Search Campaign - All CSE schools participated
- ISS EarthKAM - 200 students from CSE schools took part in workshops
- Project Paridhi - 300 students took part in this activity to measure the circumference

**SPECIAL EVENTS**

CSE Schools also participated in special events. Notable ones include:

- Interaction with Astronaut Sunita Williams at American Center
- Astronomy Workshop at Nehru Planetarium
- Astronomy Summer Camp and Overnight trip to Astroport
- 3 CSE schools conducted activities at NGOs for underprivileged kids on World Student Day

**Achievements by CSE Students**

CSE students made their schools proud by winning awards in prestigious competitions.

- Indraprastha International School won 2nd prize at the CBSE Zonal level science exhibition with a Lunar Settlement Model.
- GD Goenka Public School, Rohini Sec-9 won first prize in the Interschool Science Documentary contest
- Students from The Indian Heights, Dwarka made a Preliminary Discovery of Asteroid
- CSE schools won awards during GAM in the international Astropoetry competition. CSE schools also won prizes awarded by SPACE for GAM and WSW.
OUTREACH

The Outreach group brings a variety of programmes to students and the public via Hands on science workshops, activities and interactions to increase an excitement in Astronomy and to spread scientific temper. A platform is provided for participation in programmes of repute and educational learning to gain experience in science and technical fields as well as soft skills.
Outreach conducted in 2015

In 2015, SPACE Outreach brought a large gamut of Outreach to our schools and the public, including:

- Sally Ride EarthKAM was conducted twice in 2015, with a participation of 30 schools in Delhi, Ludhiana and Chennai.

- Project Paridhi was conducted thrice, during Vernal equinox, Autumn Equinox and Winter Solstice with a total of about 3000 students who participated from Delhi, Ludhiana and Chennai. Deputy Chief Minister of NCT of Delhi, Mr Manish Sisodia joined the conduction as the Chief Guest at Jantar Mantar.

- All India Asteroid Search Campaign was conducted with 75 teams and a total of 150 students from locations around India

- World Space Week 2015 was celebrated by more than 100 events where an astounding 10,000 participants across 500 schools participated

- Global Astronomy Month was celebrated by about 80 schools and were commended by AWB for their enthusiastic participation. Special Google Hangouts were held with well known public figures in Astronomy including Science Bob ‘Pflugfelder’, and Dr Bhupendra Singh, selected candidate on Mars One mission to Mars

ACHIEVEMENTS

- In AIASC Participants made 1 Provisional Discovery, 8 Preliminary Discoveries and 111 NEO Observations. The discoverers had the opportunity to meet with Mr. Arvind Kejriwal CM of Delhi.

- Capt. Sunita Williams interacted with SPACE exclusively in a ‘Fireside Chat’ with Sachin Bahmba, SPACE CMD

- In GAM – Students won awards in International Astropoetry competition

- Project Paridhi - SPACE trained 160 students as Earth Scientists to conduct the project

- All outreach events were also conducted in new Franchise locations Chennai and Ludhiana

Feedback

“I am glad to be a part of today’s event (Project Paridhi). I always think that our classrooms should produce scientific minds and then only we can get rid of lots of misconceptions and obsolete traditions. I am really impressed with the activities and work of team SPACE.” — Mr Manish Sisodia, Deputy Chief Minister, Government of NCT of Delhi

“I extend my most reverential thanks from the unfathomable depth of my heart to SPACE for the wonderful work being done by all concerned regarding AIASC. Needless to say, SPACE provided wings to two enthusiastic students Aakash H Nair and Saumya Agrawal of our school to explore Space. These two boys have been able to achieve the highest laurel in the shape of Provisional Discovery of an Asteroid (2015PZ9).” — Ms Neeta Puri, Principal-Vivekananda Kendra Vidyalaya, Rishabhdev District, Udaipur
PARTNER OFFICES

Currently, SPACE India has two partner offices in two different regions, Northern and Southern India. The first partner office in Ludhiana has been associated with SPACE since June 2014. In 2015, the second office, which is in Chennai, was also established and joined the SPACE programme with enthusiasm.
Achievements in 2015

**CLUBS OPENED**
- Ludhiana partner has opened up 11 SPACE Astronomy Clubs in 9 different schools, and with this has gained popularity among the top schools in the city.
- Chennai has also opened 2 Clubs in a row during the first year of its business and started spreading a love of Astronomy.

**WORKSHOPS CONDUCTED**
- 17 workshops have been conducted by Ludhiana to spread Astronomy awareness.
- 6 workshops have been done in the city by the Chennai office to introduce themselves among the educational institutions.

**SPECIAL EVENTS AND CONFERENCES**
Both partners also took part in conferences and initiated events as an outreach effort to introduce the community and schools to the work done by SPACE.

**Ludhiana**
- SPACE team conducted a solar observation for the general public on 25th July and 11th September at Mandi Gobindgarh & Feroze Gandhi Market, Ludhiana respectively.
- A moon watch was conducted on 26th & 28th September at different locations of Ludhiana for the public.
- The Ludhaina group participated in the Kidzoo Fest, a family carnival with a range of activities for the children such as Robotics & Aero Modelling workshops, games, rides etc!

**Chennai**
- SPACE team celebrated PSLV-28 launch by conducting a Hydorocket launch at Marina Beach on 9th July, 2015, where the crowd was excited to view the launch.
- The team conducted Zero Shadow Day at D.A.V Public school, Velachery, Chennai on August 18, 2015, where 80 students of grade 8 took part and observed the same at local noon.
- SPACE Educators conducted Moon observation for general public on August 31, 2015 to break the general myth behind ‘Blue Moon’. A Super Moon observation was held on 28 September at House of Hiranandini, Egattur, Chennai.

**FEEDBACK**
“A very informative awareness programme that educated the students as well as teachers about the ‘Zero shadow day’. The live demonstration by the personnel of SPACE Technology and Education Pvt. Ltd. have inspired students and kindled scientific temper in them” - Ms. Minoo Aggarwal, Principal and Regional Director of DAV Public School, Chennai

“Very interesting program. It was very informative and very useful. It gave us a lot of knowledge about astronomy and the Sun. It was great!” - Ms. Ananya Sreekanth, class 8th student
SPACE ARCADE

SPACE ARCADE is the retail arm of SPACE group. They are responsible for sales and customer service for Astronomy equipment and educational material. In 2015, sales were vastly modernised by the extension from Offline i.e. Dealer- Distributor Sales to various popular Online Portals such as Snapdeal, Flipkart, eBay, Amazon, Shopclues etc. with the aim to maximising the reach across India and making it accessible to all. Online platforms also allow for additional facilities such as Cash on Delivery, EMI, Credit Card Payment, Exchange, Return etc.
Achievements in 2015

CUSTOMER SERVICE WAS IMPROVED AND MADE 24x7
- Customer service was ramped up to address all issues 24X7 to provide better customer support.
- Instructional videos such as 'How to assemble a Telescope' were created
- Support via social media platforms and Facebook groups was launched
- Changes in packaging was initiated for safe delivery of products.

ONLINE SALES AND SUPPORT INCREASED SALES
- Online sales resulted in overwhelming responses for many models
- Educational products such as Telescope Making kits and new toys and games were introduced
- Space Arcade is planning to launch their own online portal soon which will provide customers the same experience as other online portals.

FEEDBACK

"Excellent gift at affordable price, good idea to inculcate a healthy hobby for kids and elders" - Bunty@snapdeal

"Really good quality product Timely delivered and good packing by snapdeal" - Naresh@snapdeal
SPACE Foundation is an NGO, founded in 2001, with the goal of spreading scientific temper and popularizing science via Astronomy, with the public. SPACE has been changing the face of Science and Astronomy awareness, education and innovation in India through path-breaking concepts, services and programs. These programs are being used to foster scientific temperament in society. SPACE Foundation conducted many observations via its Amateur Astronomy wing SPACE. In addition, SPACE Foundation members represented SPACE at seminars and conferences.
Astronomica

In 2015, the amateur Astronomy group Astronomica organized several observations for the public to introduce them to the night sky and to promote scientific temper.

- A Moon-Jupiter-Venus Conjunction Observation was organised in collaboration with Nehru Planetarium, Delhi on 28th September, which was attended by about 2500 people.
- A public observation was also held to view the Supermoon at India Gate.
- In addition to these, workshops were held for Telescope Making and for Astrophotography.

Attendance at Workshops and Seminars

- Nehru Planetarium organised a workshop on 23 July about visualisations of cutting edge Astronomy data in planetarium environments for students. CB Devgun (President, SPACE Foundation) gave a presentation at the workshop.
- Separately, the SPACE Foundation President also spoke about the history of the Russian Space Program at the Russian Center of Science and Culture on the occasion of the 80th birth anniversary of Yuri Gagarin on March 19th.

Achievements

- SPACE is involved as experts in the restoration of Jantar Mantar at New Delhi
- SPACE has won funding from the International Astronomical Union for 2015 under the category ‘Astronomy for Development’ – Public Outreach for 2015-2016 with the proposal ‘Sky on a Bike’

Feedback

“Hello organizers. I’d like to thank you for organizing this event and giving us an opportunity to be able to almost see Armstrong’s footsteps on the moon. All in all, a great evening and time well spent!” - Amit Gupta, ASTRONOMICA
ASTROTOURISM

SPACE Astrotourism is a pioneering company for Astronomy and Science themed travel based in Delhi, India. They organize various educational programs around the world aiming for exciting Space science tourism as a focus, such as visiting Space centres and chasing eclipses to provide students with a unique exposure to learning, packaged with tourism.

Over the past 8 years, they have catered to more than 2000 families and conducted tours at an international level. Achievements include India’s first Commercial Eclipse flight in 2009 and India’s first Eclipse Cruise in 2010 and Eclipse chasing tours to several locations to view eclipses. The most popular tour is that to Kennedy Space Center at NASA which includes exciting visits to Disneyland and Universal accompanied by a fun stay at New York and Niagara Falls.
Achievements in 2015

In the year 2015, 9 batches travelled during the summer vacation of May & June.

- AstroTourism catered to almost 400 students travelling to USA from prominent schools throughout India.
- These include Ryan International Group of Institutions, KR Mangalam Group of Schools, GD Goenka Public Schools, Mann Public School etc.
- A special ‘FAMILY’ group was launched, which opened the concept to families.
- For a few tours, special visits were also introduced to the capital Washington DC and to the exotic locale of Miami with a Biscayne Bay Cruise.

Feedback

"The package was an exotic mix of edutainment. The students had an absolutely fantastic time at Disneyland and Universal Studios where they enjoyed unique attractions." - Ryan International School

"It was a wonderful experience travelling with Astrotourism to USA. The whole trip went smoothly and everything was beyond our expectations. The moments we spent are indescribable, and would surely love to travel in future with Astrotourism” - Mr. Satnam Singh Cheema, Family Tour
ASTROPORT

Astroport is the first Space and Astronomy themed resort and activity centre of India and South Asia. It is an amazing retreat at a location which offers darkest skies possible in India. Easily approachable through road from Delhi and Jaipur, the Resort is a perfect getaway destination, managed on eco-friendly principles. Astroport is located in the lap of Aravalis overlooked by the historical Tehla Fort. It is just a stone’s throw away from Sariska National Park and conveniently connected to Agra, Delhi and Jaipur.

SPACE schools were taken to Astroport at Sariska for Overnight observations and Star Parties where they availed an exciting package comprising of the many enjoyments on offer by the facilities accompanied by guided night sky observations.
Achievements in 2015

In 2015, the package has been upgraded and made very attractive. Each stay includes:

- A tour of organic farming and facilities
- Fine dining and Snacks
- Orientation to telescopes and exposure to Planisphere
- Telescope observation with introduction to Night Sky
- Cultural entertainment and Party – with Rajasthani folk dances and DJ
- Tiger Safari to nearby Sariska

New additions to the facility that make Astroport a world class Facility:

- Organic Farming introduced and displayed to students
- Tents have been converted to luxury accommodations
- Dining arrangements have been modernised.
- Landscaping has been improved with fountains, Astronomy exhibits and murals installations

In 2015, a large number of Club Overnight sessions and Star Parties were taken on tour to Sariska.

- Approximately 125 Club overnight sessions were concluded
- About 21 Star Parties were conducted with 7500 students

In 2015, a few special events were also celebrated at Astroport. They include:

- New Years Eve Gala Party with Observing and music
- Messier Marathon session

Feedback

“Kids had a great time. They enjoyed it to the best”- School Coordinator, Amity International School, Pushp Vihar

“The teachers have taken utmost care and with great enthusiasm completed the session. Thanks” – School Coordinator, ITL Public School, Dwarka
LEO PLANETARIA

LEO PLANETARIA, founded in 2007, are pioneers in digital planetarium technology (fixed & mobile), planetarium content and planetarium education in India. They design, manufacture, supply and run mobile and fixed digital planetariums. The prime aim is to give cost effective, easy, widespread and regular access to school students and general public to planetariums. Currently they have placed twenty mobile planetariums across India and two in the Middle East Countries. Orange Education Pvt. Ltd., Yuva Kalyan Samiti, Al Nejoum Al Sathaa Management Consultancy are their prime execution partners.

DigiskyTM

The Planetarium Is a School, a theater and a cinema all rolled all into one.
Achievements in 2015

- A large number of workshops were held across India, on usage of full dome digital planetarium as a teaching aid
- Trained hundreds of teachers on night sky reading
- Workshops covered more than 22 Indian states and 160 districts

In 2015, 6 planetaria systems were sold, including:
- Izma Media and Management P. Ltd., Nepal
- 2 mobile units to Odisha DST.

Punjab Board became the first board in India to recommend Planetarium Education as a pedagogical step to teach Astronomy at a Policy level.
SPACE in the News

"Reaching for the Stars" - Hindustan Times
Delhi, 18 August, 2015

"Measuring earth’s circumference" - The Deccan Chronicle, Chennai, December 23, 2015

"Star kids: Delhi students discover 2 new asteroids" - DNA - Front Page August 15, 2014

"School students get a hang of Equinox" - News Today, Chennai, September 25, 2015

Space Science courses for students - News Today, Chennai, December 16, 2015

"Rocketry workshop held at Ryan School" - Daily Ludhiana, 8 May, 2015
Astronomy is useful because it raises us above ourselves; it is useful because it is grand. It shows us how small is man’s body, how great his mind, since his intelligence can embrace the whole of this dazzling immensity, where his body is only an obscure point, and enjoy its silent harmony. –*Henri Poincare*

**SPACE GROUP**

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The Mirrored Night Sky © Xiaohua Zhao (China)  
One of 10 Best Annual Astronomy photos as selected by The Royal Museums Greenwich in London