



ACU WELLNESS

ACADEMY FOR ACUPRESSURE AND ACUPUNCTURE
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SEPTEMBER 2023

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(FOR PRIVATE CIRCULATION ONLY)

VOL 12 No.9

23-08-2023

D DAY FOR INDIA

CONGRATULATIONS TO
Dr.SHANKARAN,
DIRECTOR, URSC AND
TEAM ISRO

HEARTY CONGRATULATIONS TO TEAM ISRO

Today, on the 23rd of August 2023, INDIA entered the world record as the first country to land near the South Pole of the Moon. The whole world was viewing the live telecast of VIKRAM landing on 23rd August 2023 with bated breath. When it happened, the grand success of soft landing itself was worth celebrating by all 140 crores of Indians and they diligently did so.

The Chandrayan 3 is a technology marvel produced by UR Rao Satellite Centre and its main architect is **Dr. Shankaran** who is the Director of the center. We passionately convey our hearty congratulations to

Dr.Shankaran and his entire team, particularly the **Mission Operations Team** which has done a wonderful job for the success of Chandrayaan 3 mission.

The foundation for the Satellite Technology was laid by just over 150 engineers under the leadership of **Prof.U.R.Rao, way back in (1972)** and today it has grown as a Banyan Tree accommodating more than 3000 Engineers in Bangalore working exclusively on the satellite technology.



KARNATAKA CHIEF MINISTER
CONGRATULTES Dr.SOMANATH,
CHAIRMAN, ISRO AND Dr.SHANKARAN,
DIRECTOR URSC

YOUR DONATIONS CAN BE SENT TO:

ACADEMY FOR ACUPRESSURE AND
ACUPUNCTURE (AAA).

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As I was one of the few engineers directly involved in **Chandrayaan 1** with the then **Director Dr.Alex**, I could imagine the efforts of the Centre Director who had worked almost day and night to meet the schedule of the first mission and make it successful. The mission detected the presence of water in the Moon and created history in Moon Exploration. The whole world started looking at the Moon and also INDIA from then on.

Once again, on behalf of all our Academy well-wishers and members, I convey my hearty congratulations to TEAM ISRO particularly TEAM URSC under the leadership of **Dr.Shankaran** and the Project Director, Chandrayaan-3 **Mr. Veera Muthuvel** for this grand show which made the whole world to look at INDIA with awe and appreciation.

Precision was the watchword right from LVM3 Launch to soft landing of VIKRAM. Hats off to TEAM ISRO particularly to Quality Assurance Team. The Pragyan Rover started moving out majestically and INDIA's and ISRO's imprints were permanently etched for a kilometer and INDIA has the right to claim the area for exploration in future.

Prime Minister very succinctly explained the exploration is for the humanity not for a particular country. Now more and more developing nations are ready to join space exploration under the leadership of INDIA . **This decade certainly belongs to INDIA not only because of economy revolution but due to spiritual revolution. The whole world accepted YOGA as the main path to keep themselves healthy and happy.**

HATS OFF to the Prime Minister for making YOGA as a tool for transformation in the whole world. **HEARTY CONGRATULATIONS INDIA AND ISRO.**

Dr.H.Bhojraj, Ex.ISRO Scientist and Chairman, Academy for Acupressure and Acupuncture

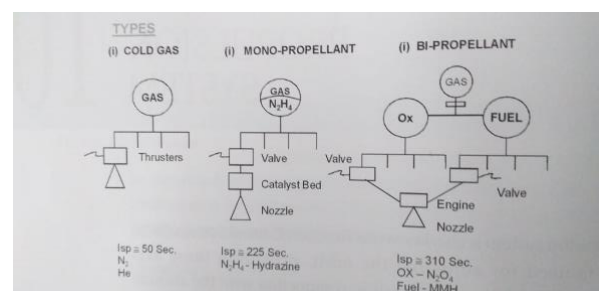
KNOW THE PROPULSION SYSTEM- FOR HIGH SCHOOL STUDENTS

BY **Dr.H.BHOJRAJ**,
Mr.SUNDRAMURTHY,
Prof.SOMA Rtd.ISRO SCIENTISTS

PROPULSION SYSTEM

Propulsion system produces the required force by burning fuel and oxidizer to lift off and further operations to the rocket to go upwards and inject the spacecraft into the orbit. Also used for orbit corrections along with orientation correction called for operating the payload.

Propulsion is the action of driving or pushing forward. For that we should have a force to push. In space technology Propulsion System is also known as Reaction Control System (RCS) and is used for adjusting the orbit, providing three axis attitude control for a spacecraft in conjunction with the attitude control system.



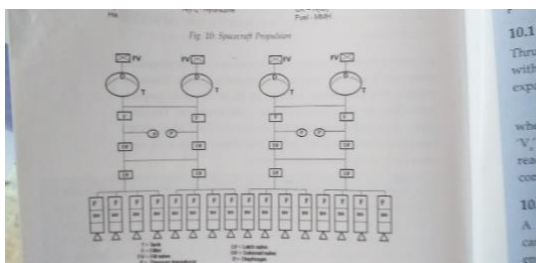
The main propulsion system components a set of propellant tanks (fuel and oxidizer) and a set of thruster groups. These are suitably interconnected, isolated by latch valves to provide redundancy for all orbit and attitude control function. There are three types of propulsion systems.

1. **COLD GAS SYSTEM** in which the gas is stored with high pressure and released with control for providing the thrust.

2. **MONO-PROPELLANT SYSTEM** where a single propellant released from the tank is made to burn with chemical reaction and released through the thruster to produce the required thrust.

3. **BI-PROPELLANT SYSTEM** where both oxidizer and fuel are released to the thruster for burning and the hot gas is released through the nozzle to produce the required thrust. In Chandrayaan 3 the bi-propellant system has been used.

Both fuel and oxidizer are filled in the tank and a strong diaphragm is used to separate the nitrogen as pressurizing gas, from the hydrazine (N_2H_4) as fuel and Mixed Oxides of Nitrogen (MON) as oxidizer. It is solution of Nitric Oxide (NO) in di-nitrogen (the mixture MON3 contains 3% nitric oxide). Fuel flows through individual filters and two latch valves between the tanks and thruster assemblies. Pressure transducers are located between the tanks and thruster assemblies. These pressure measurements, together with the temperature of the tank and the knowledge of the tank size and initial loading, allows the calculation of the fuel remaining in the tanks.



All lines are interconnected between latch valves to minimize the effect of valve failure. All fuel lines are heated to prevent freezing. The thrusters are also having

heaters to maintain the proper temperature. While the latch valves stay open and the system is controlled by the solenoid valves on selected thrusters. The thrusters are located in the opposite corners to get a coupling in all three axes of pitch, roll and yaw.

THRUSTERS

Thrusters produce thrust by expelling propellant in the opposite direction with the energy derived from a chemical reaction and thermodynamic expansion. Hot gas thrusters generally produce a higher thrust and high specific impulse compared to cold gas thrusters.

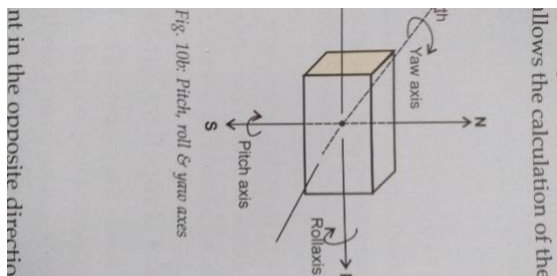
MAIN THRUSTERS IN THE LANDING MODULE



The 4 main thrusters in Chandrayaan 3 are 800N engines and used for reducing the velocity while descending which is called rough braking phase. Next it was designed to hold its attitude for certain time which is done by RCS thrusters and reaches 7.3KM above the landing site with altimeters giving accurate height which is processed in the onboard computer in real time. In the next phase fine-braking sensors will come in the loop from 7.3 KM to 800M. At

this point velocity in all the three axes will be assessed and the lander hovers over the selected site and if the onboard computer clears the site the Lander will land. The touch down velocity as expected to be 1M/Sec. If the site is not suitable for landing as per the assessment, it could move 200M horizontally and then land in a plain surface. But the selected site was perfect and it landed.

This process is done by the propulsion system based on the onboard computer processing of the data. Instead of human brain the computer will decide based on Artificial Intelligence.



REACHED SAFELY-THANKS TO THE MOTHER SAYS CHANDRAYAAN 3

Meeting with Vayah Vikas executives on 31st July 2023

Dr.H.Bhojraj and Mrs.Meera Bhojraj visited Vayah Vikas Office in Residency Road on 31st July at 12 30 PM for discussing about our proposal to impart the knowledge of Acupressure to improve the hearing for the elders. Dr.Jamuna Ravi, CEO of the organization and Ms.Joyce explained the main purpose of their organization and informed that it is a non-profit organization based in Bangaluru that is driven by the philosophy of “by the seniors, for the seniors, of the seniors”. The platform is focused on giving older adults charge of their wellness and wellbeing and also give opportunities for productive engagement so that they can build dignified lives. It contains Legal, Finance, Health and Engagement sections with experts to help the senior citizens. Already about 25000 senior citizens have registered and the registration is free as of now.

Dr.Bhojraj explained the objectives of our Academy and explained the limited research conducted on hearing improvement for senior citizens with good feedback. After discussions, it was agreed in principle to conduct a short course (Half Day) in the office for about 10 people in September and after assessing the contents, further actions can be taken. Few books on vision improvement written by Dr.Bhojraj was handed over to Dr.Jamuna for distribution among them. Mr.Srinivasan requested Dr.Bhojraj to take it up with Retired ISRO Employees Association to attach all members to Vayah Vikas so that information sharing on senior citizens requirement in the National level can be addressed. Based on this request Dr.Bhojraj met Mr.Kunjiraman, President of Retired ISRO Employees Association and Mr.Sanathanan, E.C.Member and personally explained the objectives of Vayah Vikas. They have agreed in principle to take further action after considering the request in the coming EC Meeting. He wanted the representatives of Vayah Vikas to join them and give a brief presentation to the committee.

2nd August 2023



ISRO VETERANS WITH Mr.TARSEM SINGH,
PROGRAMME DIRECTOR FOR ROHINI SERIES

My close friend and ex-ISRO colleague Mr.Omprakash Sapra and Mrs.Sita Sapra celebrated their 50th Marriage Anniversary Function in a grand way with their children and grand-children and invited his "ARYABHATA" colleagues along with many of his relatives and close friends to join them on this occasion. Shri.Tarsem Singh, (90YR) Rtd Deputy Director URSC and Project Director of SROSS project in 1980s was the chief guest and all veterans were happy to meet him and wished him healthy and happy life to complete century. All participants wished Mr and Mrs Sapra a very happy, healthy and long life together. **It was decided to call all veterans including Shri. Tarsem Singh, Dr. Kasturi Rangan, Dr.Praksh Rao and Dr.R.M.Vasagam for a special contributory lunch planned to be organized shortly under the leadership of Mr.Sathyamarthy.**

13th August 2023 -KBGA
UPDATE



RELEASE OF KBGA NEWSLETTER

The regular Executive Committee Meeting of Karnataka Badaga Gowdas Association (KBGA) was conducted in Kaveri Hall of Malleshwaram Club, Malleshwaram. About 30 people from various walks of life attended the meeting. **Mr. S.Saravanan, President** welcomed the members. Meeting started with the felicitation of young achievers, **Ms.Mahitha** daughter of Mr.R.Ramesh, Teacher and Mrs.Geetha Ramesh from Kattabettu for her selection in the logistics team to interact with G20 delegates and **Ms.Sisna** daughter of Mr.S.Saravanan, President KBGA and Mrs.Sona Saravanan, for being the first BADAGA girl to come out with flying colours in National Law School as Lawyer. Patrons Dr.Bhojraj and Mr.Murthy conveyed their blessings and best wishes to these young achievers and all EC members lauded their achievements. **It will be motivating for this ethnic tribal community for competing with the best in the world and making a mark.** After discussing the formal agenda, the KBGA Newsletter prepared under the able leadership of **Mr.Nagulan Joghee** was relaunched with the promise of biannual publication for motivating the ethnic community members to come together to know the plans of the present Executive Committee. The first newsletter hardcopy was released by all the ladies in the EC and received by the Patrons.

CASE HISTORIES

CATARACT AVOIDED, HEARING-
AID DISCORDED AND TINNITUS
COMPLETELY CURED WITH
ACUPRESSURE

Says
**Mr.Bhaskarnarayana Ex.ISRO Scientist and
Mentor for HIRP Research**

Myself and Dr.Bhojraj joined ISRO in the year 1972 and worked together till our retirement though I was shifted to Head Quarters of ISRO as Scientific Secretary. During 1990's he started

his alternate therapies experiment and started spreading all across ISRO Centres especially Acupressure as a preventive health care system. He retired 4 years after me in 2011 and started his own Academy for Acupressure and Acupuncture mainly to get the recognition of the State Government for this effective system. Though the process is on, he started the eyesight improvement project and hearing improvement project mainly based on my own results to establish the efficacy of this simple healing system by self-activation of Acu-Points.

After Dr.Bhojraj established the "ACADEMY FOR ACUPRESSURE AND ACUPUNCTURE" in the year 2012, I have been utilizing his expertise to treat myself and many of my family members successfully. Out of all the treatments two important areas in which I could get wonderful results which I want to record.

EYE IMPROVEMENT

As I am diabetic since 1999, I was getting my eyes examined every two years. In the year **2013**, in the routine checkup Ophthalmologist talked about the cataract formation in my eyes and told me that I might have to undergo cataract operation in six months' time. In one our visits to Dr.Bhojraj's Academy I mentioned this to him and he suggested a set of exercises with acupressure points. I started practicing regularly for six months and found some clarity in my vision. So, I went for the checkup after one year and the Ophthalmologist cleared me. I specifically asked about cataract and he told there was no formation as on that date. I mentioned this to Dr.Bhojraj after 4 years of checking and based on this feedback the eyesight improvement book was written and research project started. Till today I could postpone my cataract operation.

HEARING IMPROVEMENT

In 2015, There was significant hearing loss in my right ear. Certainly, I was unable to hear the TV sound in normal volume which my wife could hear comfortably. I had consulted three ENT specialists and all of them after extensive

tests concluded that I required a hearing aid to restore my hearing. I thought it must be due to normal aging process and bought the hearing aid for Rs.40000/. After using it for one week, I had to consult Dr.Bhojraj for my wife's problem and I casually mentioned about my hearing loss. As usual, he suggested few points as per acupuncture theory near the ear and asked me to activate every day. To my great surprise after 7 days of practice, I could hear the sound without the hearing aid. I continued my practice seriously every day along with eye points for nearly two years without using the prescribed hearing aid. Again, I mentioned this in one the Academy functions and the Hearing Improvement Research Project was born. Till this date, (AUGUST 2023) I never used the hearing aid but I could hear normally. Thank you Dr.Bhojraj.

TINNITUS VANISHED

I was having the sound in both my ears during the same time of my loss of hearing. As I was practicing for hearing loss the sound in the ear also slowly vanished within a year. But during Covid period (2021), I experienced a minor loss of hearing and so-called TINNITUS also appeared in the left ear. But as I continued to practice the acu-points the disturbing sound gradually disappeared within a month. This is my personal experience and as a Scientist I could understand the mechanism of hearing. I appreciate the efforts of another ISRO scientist who is trying to give a research paper on this hearing improvement only with acupressure. I wish him all the best and extent my moral and material support for the research.

Mr.BHASKARANARAYAN



Dr.Surendra Pal, Mr.R.N.Tyagi, Mr.Malik, **Mr.Bhaskarnaryana** and Dr.Bhojraj .LUNCH MEETING IN HOLIDAY INN

MIRACLE CURE WITH ACUPUNCTURE FOR MY BACK PAIN IN 2014

-Says Mr.Hemanth Adhikari
45 Yrs IT Expert

In 2014, I had developed back pain and started my treatment with Physician who treated me with painkillers for a month with some relief. But I used to get the pain every now and then. The physician referred me to Orthopedic Specialist in a hospital. **After usual MRI and other tests, the Doctor suggested a minor operation in the Lumber region for permanent cure.** I was not ready to go for the operation. My wife's friend who had undergone acupuncture treatment for back pain suggested me to try it with Dr.Bhojraj in Rajajinagar. I went to his Academy in 2014 and the relief I got in the first sitting with Acupuncture was unbelievable and is still in my memory. Almost 50% reduction in the pain I could observe withing 10 minutes. I had gone for 3 follow up sittings and **today 7th Aug 2023, I declare that I never had any back pain till today.**

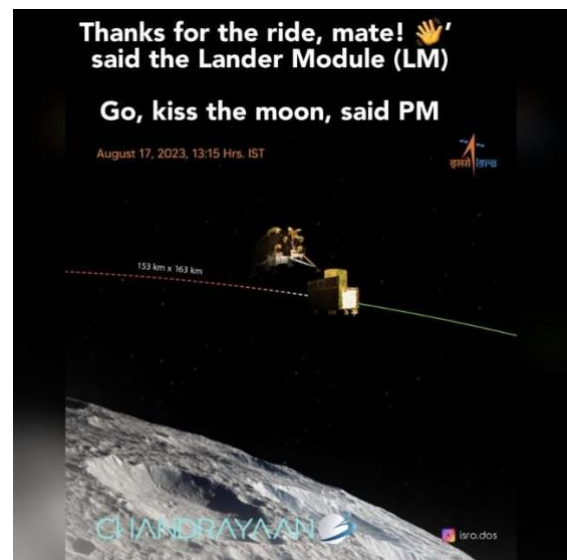
Another interesting case history during the pandemic is worth reporting. My wife Mrs.Rashmi Adhikari **had terrible neck problem** and we could not go the Doctor during the Covid Lockdown. I called Dr.Bhojraj over the video call and he explained all the acupressure points for releasing the pain. Again, it worked like a miracle. **Her neck pain came down within a week and we use those points whenever she gets that pain.** I have brought her for the heel pain which is bothering her for the last six months on 7th August. Within 3 sittings she was almost cured of her heel pain especially the early morning pain after getting up from the bed has drastically reduced. After the first sitting, the heel pain increased but after the second sitting, the early morning pain came down drastically. The seed put in the ear reflexology heel point gave me almost instant relief to our surprise.

26-08-2023

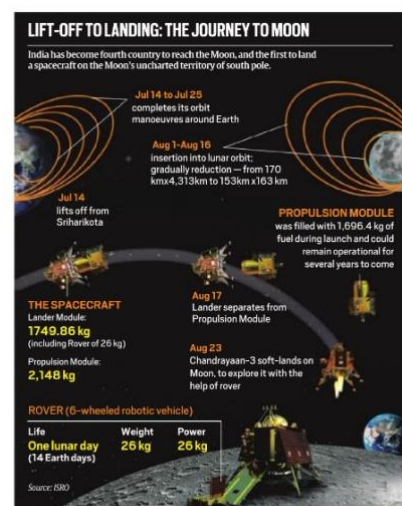
HEARTY CONGRATULATIONS TEAM ISRO



"The success of Chandrayaan-3 is not limited to one country but it is the success of the mankind" Prime Minister said after the grand success.



"Go and kiss the moon" Propulsion Module (PM) said this but our Prime Minister (PM) told "Go and conquer the Moon". **FANTASTIC Dr.SOMANATH, Dr.SHANKARAN AND Mr.VEERA MUTHUVEL.**



Dr.SURENDRA PAL SINGH

Dr.Surendra Pal, born on 10th March 1948, joined ISRO in the year 1971 after a brief stint as Scientist in Ooty Radio Telescope facility under TIFR which was regarded as a premier organization. He was posted in Satellite Systems Division under the leadership of Prof.U.R.Rao in VSSC. He had the fortune to meet Dr. Vikram Sarabai and get his personal advice to continue the unknown field of Antenna Design. He became an international expert in communication technology and became Distinguished Scientist in ISRO and also Associate Director before retiring on 31st March 2012. He is the founder Program Director of ISRO and served as Senior Advisor for SATNAV-ISRO after retirement.

Worked with Dr.Abdul Kalam very closely for developing antenna for Aryabhata and also reviewed TT&C system for SLV. During his period in ISRO his team developed systems in VHF, X, C, Ku frequency bands for TT&C and data transmitting for all Indian Satellites. The team also developed the expertise to communicate with Deep Space Antenna which is used now to communicate with Chandrayaan-3. Dr. Pal was elected as President of IETE (2012-2014). He also served as Vice Chancellor of Defense Institute of Advanced Technology, Pune. He was honored by many national and international awards in his 50 years of service to the Nation.



THE WOMEN POWER OF ISRO-CONGRATULATIONS. SPECIAL THANKS TO Dr.SOMANATH, CHAIRMAN ISRO FOR DEDICATING THE SUCCESS NOT ONLY TO THE PEPOLE WHO HAVE WORKED NOW BUT ALSO TO THE EARLIER GENERATION



TENTATIVE PROGRAMME OF CHANDRAYAAN CELEBRATIONS- DATE 3RD SEPTEMBER 2023

VENUE: **HOTEL MONARCH LUXUR**, 67, INFANTRY ROAD, BANGALORE

PROGRAMME

10 30 AM: REGISTRATION AND COFFEE 11 00 AM: WELCOME ADDRESS BY Dr.H.BHOJRAJ 11 10 AM: INTRODUCTION OF SPEAKER BY Mr.NAGULAN JOGHEE, TRUSTEE AAA 11 20 AM: TALK BY Dr.SURENDRA PAL 12 20 PM: QUESTION AND ANSWER SESSION 1 00 PM: RELEASE OF CHANDRAYAAN LVM MODEL BY Shri.S.V.RANGANATH AND ADDRESS 1 10 PM RELEASE OF SEPTEMBER NEWSLETTER BY Shri.ACHUTA RAO AND ADDRESS 1 20 PM VOTE OF THANKS BY Shri.R, MURTHY 1 30 PM LUNCH



Mr.Rajshekar, GM, Mrs.Safia, MD, Dr.Bhojraj, Mr.Murthy, Mr.Nagulan Joghee on 28-08-2023



Editorial Committee: Dr.H.Bhojraj, Mr.Nagulan Joghee, Mr.Sundramurthy, Prof.Soma and Mrs.Jija Subramanian

