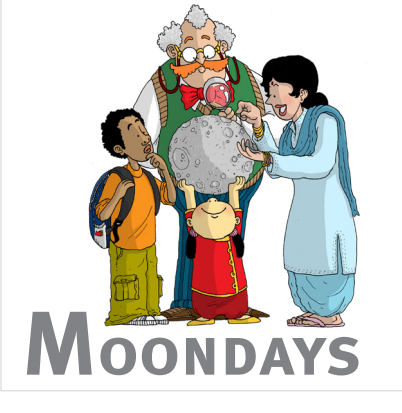
GALILEO
Teacher Training Program

NEWSLETTER 1
2011

www.galileoteachers.org

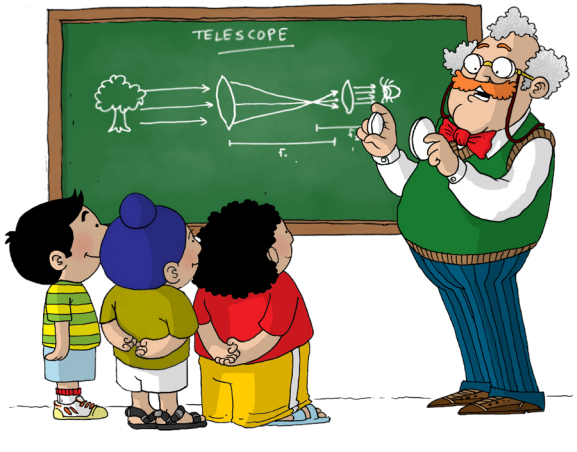
GALILEO
Teacher Training Program



I am very pleased to announce the **first GTTP newsletter**. Its main purpose is to create a mechanism that will maintain everyone connected and shorten the distances between us. This is an effort to bring to the whole community all the amazing work everyone is doing, share achievements and announce opportunities. Your contribution is very important and your support the heart of what we do. May this be the beginning of a very successful communication story and represent pleasant and useful moments to all readers.

In these pages you will find reports of activities, future opportunities, success stories, resources on the spot, ephemeris and other useful information. I call your attention to one important announcement of an activity that will take place very soon: GTTP MoonDays during GAM2011. But don't forget to check all the other announcements and opportunities as well.

Join us and help GTTP fulfill its vision of making this a much better world !!!



Global Astronomy Month 2011

by Mike Simmons (President Astronomers Without Borders)

Global Astronomy Month continues the excitement of the unprecedented International Year of Astronomy 2009 (IYA2009). IYA2009's 100 Hours of Astronomy showed what the astronomy community can do working together. Amateur astronomers, clubs, science centers and others held events by the thousands around the world, attracting the largest public audience ever. And everyone wanted more.Global Astronomy Month is Astronomers Without Borders' response, bringing new ideas, new opportunities and again bringing enthusiasts together worldwide, celebrating One People, One Sky. April 2011 will again be a busy month for amateur and professional astronomers, educators and astronomy enthusiasts as Global Astronomy Month (GAM) returns for its second edition.

GAM2011 Website: http://www.gam-awb.org
Twitter: http://twitter.com/gam_awb
Facebook: http://www.facebook.com/gam.awb

Global Hands-on Universe Meeting 2011

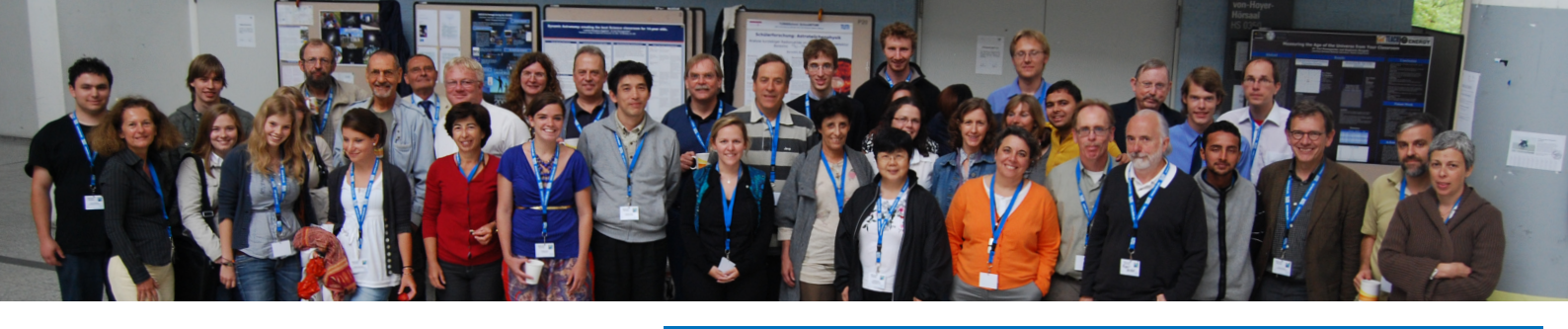
by Alan Gold (University of California - Lawrence Hall of Science / GHOU US)

Yerkes Observatory

The Global Hands-On Universe conference will be hosted by Yerkes Observatory by Geneva Lake in Williams Bay, Wisconsin, USA, with many events held at the adjacent Aurora University, George Williams College. Yerkes Observatory is a facility of the Department of Astronomy and Astrophysics of the University of Chicago. It was established in 1897 and is home to the largest refractor telescope ever built (40"). Today the 77-acre, park-like site in southeast Wisconsin provides laboratory space and access to telescopes for research and instruction. Yerkes Observatory bridges important perspectives in formal and informal education and is active in the practice of observational astronomy. Professional and student astronomers as well as astronomy educators are drawn to the observatory. These communities learn from one another, build relationships, and create programs for young and diverse members of our society. George Williams College, nestled along the banks of Geneva Lake, is not only in an idyllic setting, but provides modern, well-equipped facilities for conference meetings, computer labs, and housing and food service for conference attendees. Alternate lodging is available at nearby locations as well, and those attendees who stay off-campus have the option of partaking of the campus/conference dining arrangements as well. There is also a "Music by the Lake" summer music festival staged each summer near the lakeshore and a living museum at Beasley Campus Center. All the information related to the conference can be found at GHOU website

Global Hands-on Universe site: www.globalhou.net
Yerkes - http://astro.uchicago.edu/yerkes/
Aurora University - http://www.aurora.edu/about/

MEMORIES
GHOU
2010



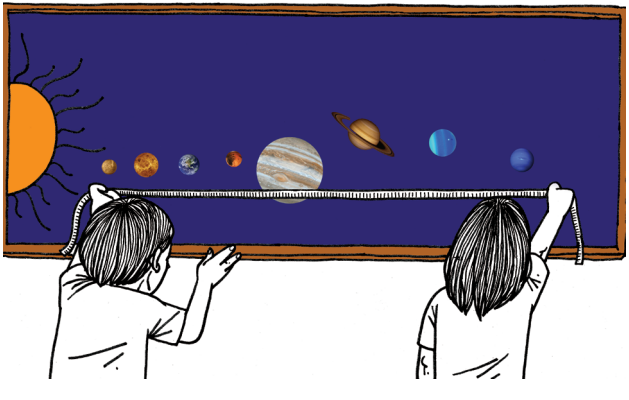
ASP 2011 Conference

"Connecting People to Science."

The Astronomical Society of the Pacific (ASP), in partnership with the American Geophysical Union (AGU) and the Space Telescope Science Institute (STScI), is pleased to announce the 2011 national conference, "Connecting People to Science." The venue will take place in Baltimore, Maryland, July 31 - Aug. 3, 2011. The conference web site is now accepting registration and abstract submissions at *http://m1e.net/c?12615860-bgzvSUaOopH2c%406252353-6nMbeuSOvkYyQ*

Everyone working in education, public outreach, and science communication in space, earth, and physical science is cordially invited to consider how best to share the results of our work with each other and the public, how to improve our practice, and how to make connections across science disciplines. Participants will include people working in formal education, informal settings, on the web, and in the media.

There will also be a weekend workshop on teaching hands-on astronomy (entitled "In the Footsteps of Galileo") July 30 and 31, for teachers in grades 3-12 and those who work with them.



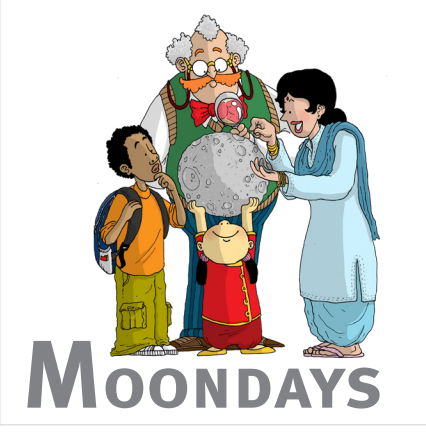
European Planetary Science Congress 2011

Education and Public Outreach Sessions

La Cité Internationale des Congrès Nantes Métropole
03 – 07 October 2011, Nantes, France

Lunar Outreach as a tool for Public Engagement in Planetary Science
Convener: D. Daou
Co-Conveners: M. Anand
http://meetingorganizer.copernicus.org/EPSC-DPS2011/session/8250

Global Awareness and Life-long Learning
Convener: E.T. Chatzichristou
Co-Conveners: D. Daou
Link: *http://meetingorganizer.copernicus.org/EPSC-DPS2011/session/8249*



GTTP Moondays

The GTTP MoonDays, is a collaborative activity of The Galileo Teacher Training Programme and Astronomers Without Borders as part of the Global Astronomy Month 2011 . It will be launched during the Global Astronomy Month 2011. It will be an invitation for educators, amateur astronomers, outreach promoters and everyone to observe and appreciate our natural satellite in a whole new way. During GAM 2011, there will be a whole week devoted to exploration of the Moon (Lunar Week) as well as a selection of days spread throughout the month to embrace projects that require a longer time interval. There will also be a set of dates throughout the whole year devoted to the exploration of the Moon, providing an opportunity for the completion of deeper research projects and a long-term exploration of our nearest neighbor.

Check for more details of Moondays on: *http://www.site.galileoteachers.org/index.php?option=com_content&view=article&id=173:gttp-moondays&catid=3:events&Itemid=29*

You can enjoy all the opportunities that will be available to you, share your equipment or your knowledge, You can also contribute by rating the quality of the presented projects and works or art. PARTICIPATE AND SHARE !!!!

GTTP MoonDays will have other challenges for you along the year. If you would like to receive more information subscribe our newsletter here: www.galileoteachers.org/newsletter

Contact: info@galileoteachers.org

With the support of the Las Cumbres Global Observatory Telescope Network GTTP will launch a second round of call for workshop proposals. Keep tuned !!

Africa HOU Partner

by Susan Murabona
Africa HOU leader

Africa HOU holds a Star Party Dinner at the Rotary Club in Kenya for 70 rotarians, friends and guests. The venue took place March 12th.

Second GTTP Kenya March 23rd 2011.

Kenya High School, one of the schools that has been working on the HOU and Universe Quest program came out number 1 in physics in the Kenyan Nation wide exam. One of the students in our club was actually top 100. It was good news to hear that an all girl's school was number one in physics nation wide in a subject that has been predominantly male/boys.

Astrobotic Club in Romania

by Octavian Georgescu, National College Carol – Craiova - GTTP teacher Romania

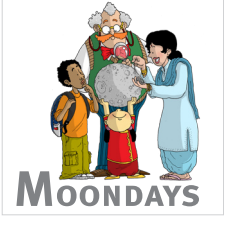
Astrobotic Club in Romania (by Octavian Georgescu, National College Carol – Craiova - GTTP teacher Romania) will continue their public observing sessions. After observing the partial Solar Eclipse in January they are preparing spring sessions to observe Sun's spots among other sessions planed. They will also participate in the Earth Hour during which they plan to analyze light pollution over Craiova. Among plans is also the preparation of the students for the National Olympiad of Astronomy and Astrophysics

GLOBE at Night 2011 Campaign

March 22 - April 4 for the Northern Hemisphere &
March 24 - April 6 for the Southern Hemisphere

The GLOBE at Night program is an international citizen-science campaign to raise public awareness of the impact of light pollution by encouraging everyone everywhere to measure local levels of night sky brightness and contribute observations either by smart phone, tablet or computer to a world map. All it takes is a few minutes to participate at http://www.globeatnight.org . By recording more measurements of the night sky brightness levels in neighborhoods, people are using this information in local decisions on how to increase safety, lower energy consumption, and protect human health and wildlife -- areas affected by high levels of extraneous light. These observations will also help identify parks suitable for urban "sky oases"- places that can be developed to help city dwellers appreciate the night sky from a safe, dark place.

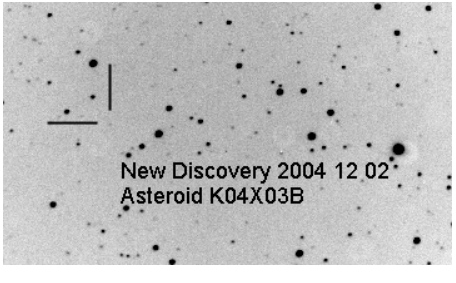
GTTP MoonDays 2011

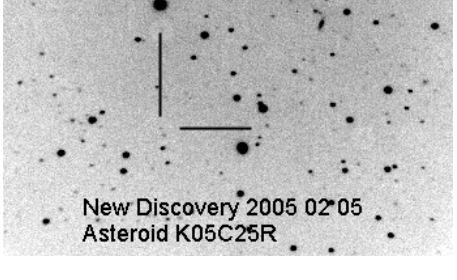


The Galileo Teacher Training Programme is partnering with AWB during GAM2011 and will promote several activities devoted to the Moon. There are several challenges and suggestions for your participation as a promoter, educator or just participating in the hundreds of venues that will take place around the globe.

International Asteroid Search Campaign

by Patrick Miller (IASC coordinator)





The International Astronomical Search Collaboration (IASC = "Isaac") offers 8 asteroid search campaign cycles per year. Each cycle lasts 45 days and includes 30 to 60 schools. Starting March 21 until May 6, 2011, there will be four campaigns:

- International Asteroid Search Campaign (15 schools from 9 countries)
- Portugal-Africa Asteroid Search Campaign (8 schools)
- Mexico Asteroid Search Campaign (8 schools)
- Also, during the March-May timeframe IASC will run:
- Xinglong China Asteroid Search Campaign (15 schools)
- Pan-STARRS Asteroid Search Campaign (32 schools)

The Pan-STARRS search campaigns use images from the 1.8-m PS1 telescope located on Haleakala (Maui). These images are the largest in the world, containing 1.4 billion pixels. Students make as many as 500 asteroid discoveries during one campaign.

From May-August there will be four India Asteroid Search Campaigns organized through S.P.A.C.E. (New Dehli). A total of 60 schools will participate.

IASC uses images from the Astronomical Research Institute (Westfield, IL), Panoramic Sky Telescope & Automated Response Systems (Haleakala), Faulkes Telescope North (Haleakala), Faulkes Telescope South (Siding Spring, Australia), and Xinglong Station (National Astronomical Observatories of China).

For more information on how your school and students can participate in an IASC asteroid search campaign, contact Dr. Patrick Miller, Hardin-Simmons University (Abilene, Texas) at *iascsearch@hsutx.edu*

The Asteroid 2011 BG16 will have a Portuguese name !!!

Students from Escola Secundária de Alvide (Discoverers of Asteroid 2011 BG16)

Over 20 Portuguese schools are now participating in the International Asteroid Search Collaboration campaign. Dozens of objects were observed in what was called the All Portugal Campaign. Among the several important observations some schools found new asteroids and one of them was lucky to have it confirmed by follow-up observations, the 2011 BG16 will receive a Portuguese name.

The complete story can be found here:
http://www.portaldoastronomo.org/noticia.php?id=769

April 4th and 5th

Timetable in April

New Moon 3rd 14:32 UT (Sunday)
First quarter 11th 12:05 UT (Saturday)
Full Moon 18th 2:44 (Friday)
Last quarter 25th 2:47 UT (Friday)

Baby moon…not small, just very young

by Grom Matthies (NUCLIO)

During the two weeks between New and Full Moon, our cosmic neighbor is always visible in the early night sky. But, just after New Moon, our natural satellite is unfortunately still much to near the Sun in the sky to be really observable. The first chance to glimpse a very young moon this month will be on April 4th right after sunset (around 19:00 or 7 p.m local time). The Moons smallest crescent might or even should be visible from Western Europe and Western Africa. The American continent is next in line to spot a young moon with a few more hours of age than as seen from Europe and Africa.

A binocular could help to find the Moon, but to really count as a sighting, you will need to spot the Moon also with unaided eyes. A thin cloud bank right above the horizon filtering the sunlight might allow for a glimpse of the young Moon even in very late daylight, pushing the chance to spot a even younger crescent a bit more to the East. For most countries south of the equator this sighting will not be possible this month.

Give it a try and feel yourself following the footsteps of ancient Babylonian astronomers and avid contemporary observers. Babylonians needed to spot the young moon to ensure their calendar was counting right. Nowadays it is a kind of unofficial chase to break the record for sighting the youngest moon possible.

Search for the ever so tiny crescent just above the Sun or where the Sun just had set earlier. As a crude measure of how far the moon should be from the sun, stretch out one arm, align the lowest joint of your thumb over the sun, the moon should be in range of the tip of your thumb.

Don't forget to try to take a photograph!

The Frog Blog

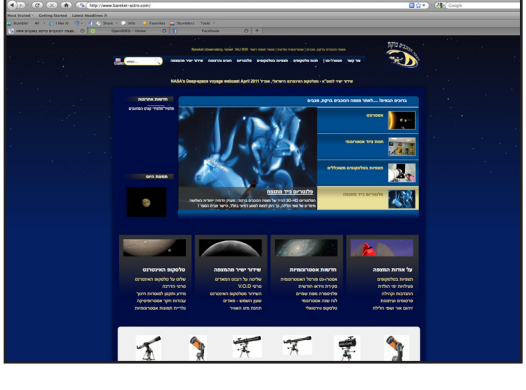
by Humphrey Jones a Galileo Teacher

The Frog Blog is a science blog for people of all ages, with interesting articles from astronomy to zoology! The blog is maintained by the science teachers and pupils of St. Columba's College Dublin. *www.frogblog.ie*

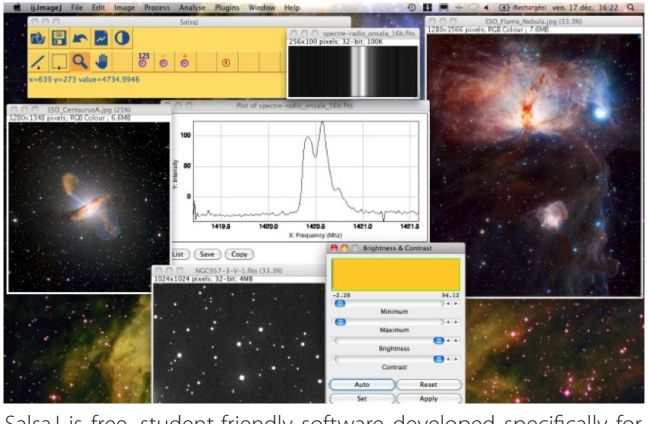
Bareket observatory website

by Ido Bareket (Bareket Observatory – GTTP Israel)

http://www.bareket-astro.com
(Use the upper-left flag in order to translate the materials to your perffered language)



Salsa J



SalsaJ is free, student-friendly software developed specifically for the EU-HOU project. SalsaJ is designed to be easy to install and use. It allows students to display, analyze, and explore real astronomical images and other data in the same way that professional astronomers do, making the same kind of discoveries that lead to true excitement about science. A number of exercises have been developed complete with data to download and detailed instructions for use.

http://www.euhou.net/index.php?option=com_content&task=view&id=7&Itemid=9

The software is available in several languages.

Astro-Edu NET

Astronomical database

by Ido Bareket (Bareket Observatory)

Imagine a place where teachers and young students can take a journey into space, without ever leaving their home or classroom. Astro-Edu is an educational place with practical and computer-based activities to inspire and excite them, while supporting the National Curriculum, a place that gives a vision of the future, while bonding the population at the Middle East, using real science and educational opportunities in space and Earth science topics.vThe program made especially for students ages 6 to 18 (K1-K12), and is including special chapters for teachers and hands on classroom activities.vThe Astro-Edu program is also offering FREE ACCESS to on line science tutorials, lesson plans, CCD astronomical images library, physics projects live webcasts, viewing access to the Israeli INTERNET ROBOTIC TELESCOPE and much more...

(Use the upper-left flag in order to translate the materials to your preferred language)

http://www.bareket-astro.com/astronet

IPhone Apps Space Brains

by Humphrey Jones
(St. Columba's College – GTTP Teacher Ireland)

To celebrate Science Week in Ireland, Discover Science & Engineering (along with Blackrock Castle Observatory and Armagh Planetarium) have released a brilliant app to test your knowledge of the cosmos! Space Brains is a brilliant new quiz and trivia app for the iPhone and iPod Touch which contains 1,000 questions on all things astronomical. Questions range from what year man first stepped on the Moon to how many planets there are in the solar system. The quizzes can be set to varying degrees of difficulty and also contains a range of game types, including a Pass 'n' Play style game for class or family fun!

Even better news - it's completely free!
http://4.bp.blogspot.com/_KpqQ9rqe9aQ/TNhgk1PQigI/AAAAAAAAHhU/8ZulbiImc8A/s320/spacebrains.jpg

IPhone Apps Pocket Universe

by Humphrey Jones
(St. Columba's College – GTTP Teacher Ireland)

One of the best astronomy apps available at the moment is Pocket Universe. Available for the iPhone and iPad, Pocket Universe helps you learn the constellations, bright stars and planets simply by pointing your iPhone at the sky. The app uses the built-in compass of your iPhone and displays the same view of the sky you see - but one that's complete with names and information. You can then find out more information about that planet, star or constellation with a click of a button. There is a brilliant feature which lets you see the movement of the planets in tonight's skyline - as a time lapse animation. I also love the International Space Station (ISS) tracking facility which will predict when you can see a passing in the night sky. All in all it's a brilliant investment for the amateur astronomer at just €2.39.
http://3.bp.blogspot.com/_KpqQ9rqe9aQ/TOPNZXAOXpI/AAAAAAAAHkY/R-Kr_Gf2MXE/s320/saturn.jpg

Resource from Dawn of IYA2009

by Avivah Yamani
(Langitselatan – GTTP Indonesia)

"Last year during IYA2009, the first activities to start the year of astronomy was Dawn of IYA event. This event brought together people from around the world to observe the sun at January 1st. For this event, there were several resources that really useful for teachers and students to build simple tools for sun observations such as sun glasses, sun dial and several other activities. here you can found the link to all the resources that can be used for sun observations and for sun education.
http://www.astro.up.pt/caup/eventos/dawn2009/resorces.php

The Zooniverse

Large surveys of the sky have transformed the way that astronomers work. Whereas in the past you'd be lucky to get enough telescope time to study a handful of galaxies, everyone now has access to hundreds of thousands of systems. With the next generation of instruments likely to generate terabytes of data each and every night, we are at risk of drowning under this flood of data. Part of the solution lies in more efficient, cleverer computer packages, but sometimes there is no substitute for the human brain. The Zooniverse (*http://www.zooniverse.org*) has created a series of online 'citizen science' programs which use the web to recruit hundreds of thousands of volunteers to assist researchers in sorting through their images.

The first project, Galaxy Zoo, launched in 2007 and has proved wildly successful, producing more than twenty papers and generating follow-up efforts with major facilities including the Hubble Space Telescope. Galaxy Zoo is now only one of eight projects which make up the Zooniverse, sending volunteers to explore the Moon, the Milky Way, and search for solar storms and even hunt for planets. The Zooniverse have been lucky to be approached by several international institutions who have worked to translate various projects in order to give even more people access to these citizen science sites. Galaxy Zoo has existed in Polish for a while now and we also have German and French versions of the site. There are Portuguese and Czech translations of our sites coming along as well.

One of the Zooniverse's most recent sites, the Milky Way Project (*http://www.milkywayproject.org/*) asks users to scan beautiful images of our galaxy taken with the Spitzer Space Telescope. This site has recently been translated into Polish as well and there are other languages coming. Translating a Zooniverse site into another language presents some interesting collaboration, mainly that people from different countries and using different languages must work closely together. Lech Mankiewicz, from the Polish Academy of Science's Centre for Theoretical Physics, has worked with the Zooniverse and shown that creating international Zooniverse sites is only possible but actually provides lots of new web traffic. The Polish version of Galaxy Zoo has brought in a large number of visitors and they have classified many tens of thousands of galaxies.

The Zooniverse is all about letting everyone take part in science. Making projects accessible to as many people as possible is essential to achieving that goal. [If you are interested in helping translating any of the Zooniverse projects into your language, please contact Robert Simpson at Oxford University via *rob@zooniverse.org*.]

Ephemeris for April to June

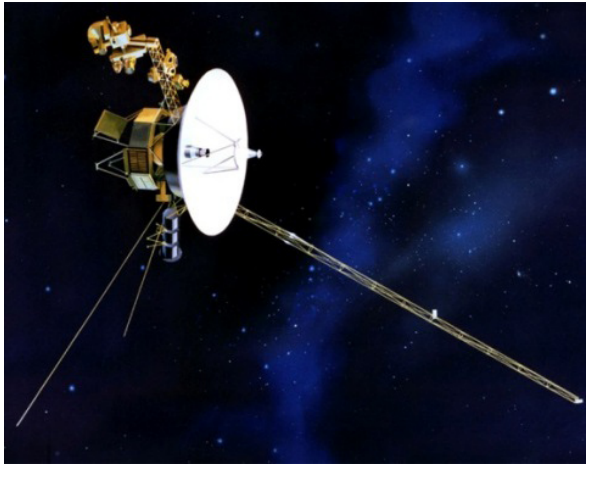
by Grom Matthies

Date	*Time*	*Details*
31.3	-	Moon near bright shiny Venus in morning sky (6º separation)
3.4	14:32	New Moon Great time for deep sky observation
3.4	23:56	Saturn in opposition Saturn will be visible right after sunset and during all night, look for slightly orange tinted Saturn not far from bright white Spica in Virgo constellation
11.4	12:05	First Quarter Moon Great time to watch the Moons craters with nightfall
17.4	-	Moon near Saturn A planet, a star and a natural satellite (Saturn, Spica Moon) pose in Virgo for you to take a unique family photo or just enjoy the party in the sky
18.4	2:44	Full Moon
19.4	18:06	Mercury near Mars (50" separation) In the early morning just at dawn point a binocular where soon the sun will rise.
19.4	-	Venus will soon stop to be the morning star on its approach to meet the Sun, look now or you will have to wait a good while for the next sighting of our sister planet
22.4	-	Lyrids meteor shower peeks Watch out for meteors coming from near constellation Lyra high in the sky before morning hours.
24.4	2:47	Last Quarter Moon
30.4	-	All those bright spots over the horizon just before sun rises are a meeting between Mercury, Venus, Mars and Jupiter. An amazing conjunction worth to look at and preserve as photography during the next few days.
3.5	6:51	New Moon Now it is best time to hunt down galaxies with a telescope. Search near Virgo (Virgo cluster) and visit nearby Saturn too.
8.5	5:20	Venus and Mercury meet to double up the morning star experience (1,5º separation)
10.5	20:33	First Quarter Moon Get a telescope and a group of mates and explore the lunar surface just after Sun is down
11.5	-	Inner planets Mercury, Venus meet up with the master of the outer planets Jupiter (<1,5º separation) Watch this conjunction in the just "before the sun-rise moments" right above the horizon. Mars is a bit lower and waits for his turn to join.
14.5	-	A near full Mon passes near Saturn and Spica in Virgo

Date	*Time*	*Details*
18.5	7:54	The "at dawn" sky meeting of bright shiny planets now culminates in a conjunction between Mercury and Venus. Mars has his eager orange eye just nearby. Look for it and find that Jupiter is just around the corner too.
20.5	1:16	Mercury and Mars are now in conjunction, but how to spot them in the day breaking sky?
23.5	9:30	Venus and Mars will join in a breakfast event conjunction.
24.5	18:52	Last Quarter Moon
29.5	16:03	Waning Moon meets Jupiter in the pre-dawn sky. Watch for the titans in size, one apparent, the other really big on its own, and tell which the brighter one is. Below them is a party going on between Mars, Venus and Mercury (as seen from top to horizon).
1.6	23:06	Partial eclipse of the Sun You like it cold? Or do you live in the Northern part of Northern Hemisphere. Go to Siberia, Alaska or Northern Canada, or visit those fjords in northern Scandinavia, dress comfortable and watch about half of the Sun been blacked out by the Moon. Be aware of local wildlife if you venture far from civilization (and vice-versa).
9.6	2:11	First Quarter Moon Best time to observe the Moon just as night falls is around the days of First Quarter.
10.6	22:04	Big half Moon near big rings. The Moon is in the vicinity of Saturn. Capture a photo and you have something to remember for the rest of your life.
15.6	20:13	Total eclipse of the Moon Is it night at your location or getting dark at around 20:13 UT? Then, yes, you are one of those to enjoy a really nice total eclipse of the Moon. What colour will the dark shadow be this year? Try to find out what caused that colour. Share pictures with the world that didn't had the pleasure to see the eclipse.
15.6	20:14	Full Moon
21.6	17:17	You can't see it, but can you feel it? Summer starts for Northern Hemisphere. Winter for all the others. What is better? A question of personal preference except for penguins and polar bears.
23.6	11:48	Last Quarter Moon
26.6	9:00	Moon and Jupiter meet (5º separation). For some it will be in the morning hours still in the dark, for others not.
1.7	8:54	New Moon No Moon, no cry (wolfs), no bright sky background (countryside), no one looking deep into the Universe? Go out, grab a telescope and explore the sky. This is to be understood as a recommendation.
1.7	9:22	Partial solar eclipse Did you see the solar eclipse in Northern hemisphere exactly one month ago? Well, if you are a penguin you didn't, but you will this time. Humans, though, have to arrange some special transport to get near the coastline of Antarctic continent below the tip of South Africa. Remember, it is winter down there.

Voyager 1

by Humphrey Jones (St. Columba's College – GTTP Teacher Ireland)



"Voyager I was launched on September 5th 1977, on a mission to study the outer edges of the solar system and, eventually, interstellar space. Amazingly, 33 years after its launch Voyager I has now reached the outer boundarie of the solar system, photographing Jupiter and Saturn close up along the way. Voyager I is now about 10.8 billion miles from the sun, traveling in a region of space known as the heliosheath, a turbulent area between the sphere of space influenced by the sun and magnetic forces from interstellar space that lies beyond.

Flying along at about 38,000 mph, Voyager 1 is continuing its path towards interstellar space, where its mission is expected to last at least another 5 years. However, NASA believe that the spacecraft may have enough plutonium power to last it to 2025. It is currently so far from Earth that radio signals, traveling at the speed of light, take 16 hours to reach the spacecraft. Its twin, Voyager 2, is traveling at a more leisurely 35,000 mph and will leave the solar system in a southerly direction a few years after Voyager 1."

Original news: http://blog.sccscience.com/2010/12/voyager-i-nearing-edge-of-solar-system.html

Future Teachers Rave over Telescope Views of Moon and Jupiter

by Robert Eklund (Website Editor- Astronomers Without Borders Publications Editor - Mount Wilson Observatory)

"Although I was impressed by an enlarged moon, the 5-year-old girl I brought was MESMERIZED by it." That's the comment of one of the participants at a star party held last November for a teacher training class at Loyola Marymount University in Los Angeles. Dr. Carolyn Viviano, a professor of Natural Science, asked Bob Eklund, Astropoetry Blog editor for Astronomers Without Borders and author of the book "First Star I See Tonight," to introduce astronomy to her class of future elementary teachers. Rave comments from some 15 attendees, some of whom brought young children to the event, included:

"It was great for me to see how much even very young kids could gain from something like this, because it makes me want to incorporate astronomy into my classroom in whatever ways I can. I haven't met a kid to this day who isn't interested in outer space, and to give them the opportunity to see it in real life (or to at least learn more about it) is a changing experience."

"The fact that I could see visible craters on the moon was ridiculous. And the three moons on Jupiter was probably one of the coolest things I have ever seen. I have always been fascinated by space, but this experience made me even more excited to learn about it. I literally cannot wait to teach astronomy in my science classes!"

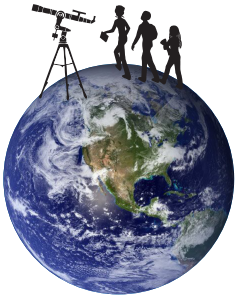
"Looking at Jupiter and the Moon through a telescope was a much different experience than I had expected! The whole experience seemed surreal because I have never seen the surface of a planet up close before. The images were so small and so distant, yet it felt like I could touch them. How cool!"









GHOU
GTTP
WORLD

Astronomy for All

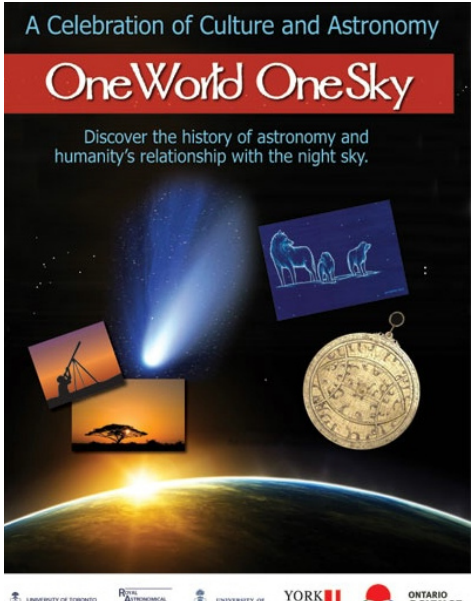
(A project in the Tribal District of Gujarat, India)

by Kathan Kothari (Manthan Educational Programme - GTTP India)

Manthan runs a science centre in the tribal district of Narmada, Gujarat, India. The main aim of the centre is to popularize science amongst the tribal and the rural members. We planned to work on popularizing astronomy in the schools of interior villages and forests, who couldn't get access to the knowledge of astronomy easily. We developed 2 exhibitions named 'Our Universe' and 'The Giant Eyes on the Earth' by using images of ESO. In 2 weeks time we traveled almost 18 villages and 42 schools. We also carried out observational activities in several schools and the students enjoyed the observational activities a lot. Along with the exhibition and the observation the children loved watching the film on the universe and the HUBBLE telescope. The students were amazed by the vastness of the universe and the beauty of the celestial bodies.

One World, One Sky: A Festival of Astronomy and Culture

by John Percy (University of Toronto - GTTP Canada)



A primary objective of "Beyond IYA" in Canada is to use astronomy to interest and inspire youth from communities that are traditionally underserved with respect to science -- such as Aboriginal, Black, and inner-city. One way to engage diverse audiences is through the astronomy in their culture and, in Canada, we had great success in partnering with Aboriginal communities in this way.

In the Greater Toronto Area, our network of astronomy educators (from universities, astronomy clubs, science centres, museums etc.) therefore organized a festival of astronomy and culture at the Ontario Science Centre on 16 October 2010. It included exhibits, hands-on activities such as solar observing and rocket launching, an "ask an astronomer" session, the documentary "Cosmic Africa", a planetarium program, inspiring presentations from speakers such as Julieta Fierro (Mexico) and acclaimed Aboriginal educator Wilfred Buck, and an Educators Panel to reflect on how cultural astronomy can enrich the school and university curriculum. The presentations were recorded, and will be publicly available in the near future. The complete program is at:

http://www.ontariosciencecentre.ca/calendar/default.asp?eventid=1015

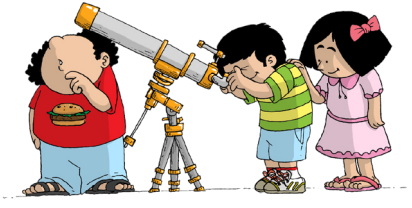
The organizers are currently reflecting on how to improve and build on this event. One idea is to take a mini-version of the program to schools in underserved parts of the city, being careful to work closely with the host schools and with the communities being served.

Partnering with a Science Teachers Association

by John Percy (University of Toronto – GTTP Canada)

As an astronomer, interested in supporting school astronomy, my most important and effective partner is an organization that is experienced and effective in providing resources and professional development for teachers -- the Science Teachers Association of Ontario (STAO - founded in 1890). I strongly recommend this partnership strategy! As projects arising from IYA and from a recent revision of the secondary school curriculum, we have developed resources to support astronomy teaching in grade 6 (age 11), grade 9 (age 14), and grade 12 (age 17), plus a GalileoScope curriculum project. All four resources were presented at the 11-13 November 2010 annual conference of STAO, attended by over 1600 teachers. The conference included 14 sessions on astronomy/space education. Our grade 9 resource is at:

http://www.astro.utoronto.ca/~percy/GradeNineAstronomyResource.pdf



Observing the Universe from La Tanza Boarding School

by Avivah Yamani (Langitselatan – GTTP Indonesia)

On February 11th, 2011 our team Langitselatan went to La Tanza high school for a Science Party held from 11th - 13th February 2011. They invited us to hold astronomy seminar and a star party. La Tanza is an Islamic boarding school from Junior High School to Senior High School. The location is quiet remote from the nearby city, but they are far away from city light which is perfect for observation. We started at 4 pm with a talk in a mosque about basic astronomy and its relation with Islamic calendar / lunar calendar. The class was attended by almost 1000 students from the boarding school. At 9 pm we promoted a talk about basics aspects of telescopes for almost 2000 students in a school yard. After that we held a star party with 2 parallel sessions of observation and planetarium show. Although we only brought 2 small telescope and 1 You Are Galileo telescope, we were surprised that we could serve almost 2000 students with that equipment. The sky was really clear and students could observe the Moon, Orion Belt, & Orion Nebula. Students had the opportunity to ask many questions. Most of the questions related to 2012 hoax, how to determine prayer time, Sun, stars evolution, Pluto status in Solar System and other Solar System topics.

You Are Galileo Telescope Workshop Trip in Indonesia

by Avivah Yamani (Langitselatan – GTTP Indonesia)

International Year of Astronomy 2009 is over but its legacy will be forever. One of the legacy came from IYA Node Japan with You Are Galileo! Project. Since 2009, we received several You Are Galileo (YAG) telescope and some students use it not only for viewing the sky object but also to use their observation result as a small research. This year, with support from UNESCO and conduct by NAOJ, there are 5 countries who will receive You Are Galileo Telescope and Indonesia is one of them. From February 20th - march 8th, Bosscha Observatory was the national host for YAG Workshop. I had a chance to join the workshop trip in Jakarta and Yogyakarta.

Successful 1st Workshop of "Galileo Teacher Training Program" in Venezuela

The 1st GTTP workshop in Venezuela took place during February 1st and 2nd at the Centre for Research in Astronomy CIDA, www.cida.ve. The effort was organized by the Galileo Teacher Training (GTTP) ambassador in Venezuela, Prof. Enrique Torres (the outreach coordinator at CIDA) and members of the GTTP network. This event is the continuation of the astronomy training of teachers and multipliers effort, started in 2006 with the "Universe Awareness Programme", a programme to inspire young children. During the workshop teachers had the opportunity to get acquainted with the knowledge and tools to study and analyze celestial bodies through techniques of astrophotography processing software and digital imaging. Participants can now develop research projects with their students and teach curricular content using the analysis of characteristics of the Solar System (planets, satellites, asteroids, comets), monitoring of variable stars, novae, supernovae discovery and anything else that can be studied through the analysis of astronomical images.

http://www.site.galileoteachers.org/index.php?option=com_content&view=article&id=160:successful-1st-workshop-of-qgalileoq-teacher-training-program-in-venezuela-&catid=40:gttp-sessions&Itemid=18

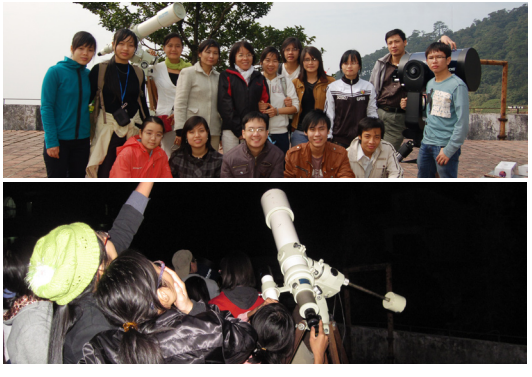
More than 30 teachers attended the 2nd Latin American GTTP Workshop

Between January 3rd to 7th, 33 teachers from Chile and other Latin American countries attended the second edition of Latinamerican GTTP Workshop, an Astronomy training initiative for teachers. The activity was organized by Associated Universities, Inc. (AUI) and National Radio Astronomy Observatory (NRAO); University of California, Berkeley; Pontificia Universidad Católica de Chile; Museo Interactivo Mirador; Universidad de La Serena; and Gemini-CONICYT Funding. It also counted on the collaboration of EXPLORA and Embassy of the United States in Chile. Teachers and students of Pedagogy, both in Physics and Science, attended to this workshop. The worshop was organized by the GTTP representative in Chile and Education and Public Outreach Officer of AUI/NRAO in Chile, Sergio Cabezón. This event was held at Pontificia Universidad Católica de Santiago, and the topics were taught by monitors from this university, Universidad de La Serena; and University of California at Berkeley.

http://www.site.galileoteachers.org/index.php?option=com_content&view=article&catid=40%3Agttp-sessions&id=159%3Amore-than-30-teachers-attended-the-second-latinamerican-gttp-workshop&Itemid=18

GTTP summer schools in Uruguay

The Observatorio de Astronomía del Instituto de Profesores Artigas in partnership with the Observatorio de Montevideo (IAVA), the Institute of Physics of the Faculty of Science and the Asociación de Aficionados a la Astronomía del Uruguay and GTTP Uruguay is organizing two courses for teachers. The courses are intended to develop lifelong learning for teachers but also to target students of the Institute. The project also aims to foster Astronomy Outreach. The courses have been designed to cover a broad spectrum of disciplines. Teachers have alreadybeen involved in the construction of the offered curricula. It is necessary to support teachers and students in training to be teachers that intend to gain a deeper knowledge in Science Education. It is very important to update teacher's knowledge in topics that attract a lot of attention of the media.
http://www.site.galileoteachers.org/index.php?option=com_content&view=article&catid=40%3Agttp-sessions&id=158%3Agttp-summer-school-in-uruguay&Itemid=18

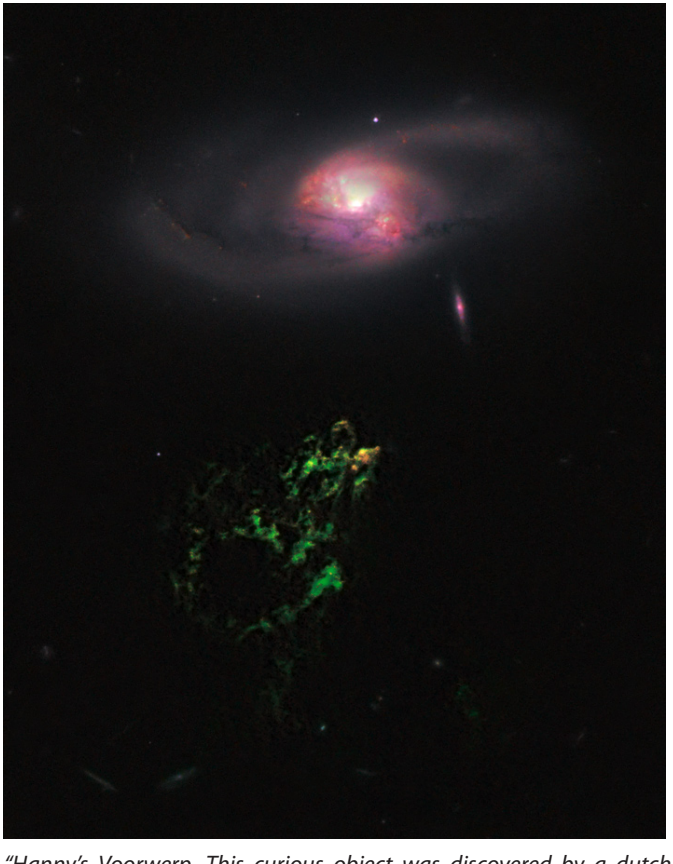


GTTP training in November 2010 at Tamdao mountain, about 80km from Hanoi (capital of Vietnam)

GTTP 2010/2011 teacher's sessions in Israel. The first meeting was for the schools national science supervisors as well as teachers, which held at the Tel-Aviv University. According to the feedback it was a great success.

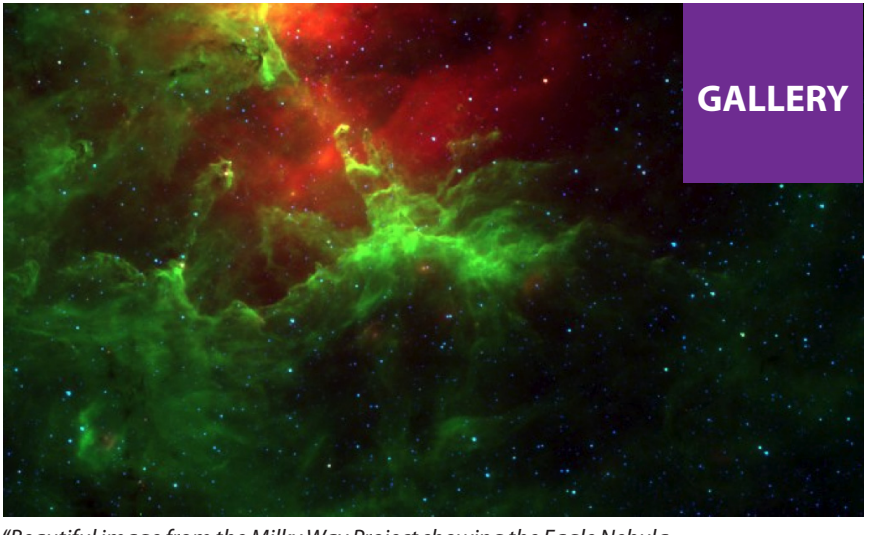
The teacher workshops are both for the Arab and Jewish sections. So far we've had about 180 teachers in 3 workshops. 6 more workshops are scheduled for the following 5 weeks.One of the goals is to directly present classroom activities and hands on tutorials for the teachers, so that they could learn how to implement the astronomical materials in the classroom, while supporting the national curriculum.Main discussed topics - lunar cycle, sizes in space, life on other planets, day & night, seasons, stars life cycle, space instrumentation, atmospheric phenomenon and more.The teachers will make an extensive use of the observatory's Astro-Edu network (further details below), which keeps on expanding on a steady state.Astro-Edu net can be translated to more than 60 different languages using the integrated translating module.

GALLERY

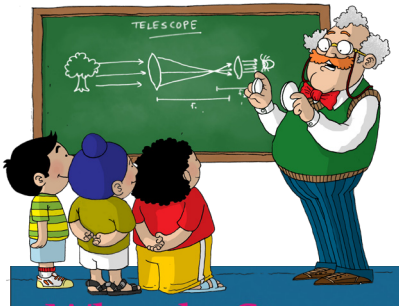


"Hanny's Voorwerp. This curious object was discovered by a dutch school teacher using Galaxy Zoo and has prompted much research."

Images from Zoouniverse



"Beautiful image from the Milky Way Project showing the Eagle Nebula (the famous Pillars of Creation)"



Why do Stars twinkle?

A star is a massive, luminous ball of plasma that is held together by its own gravity. The nearest star to Earth is the Sun, which is the source of most of the energy on Earth. Other stars are visible in the night sky.

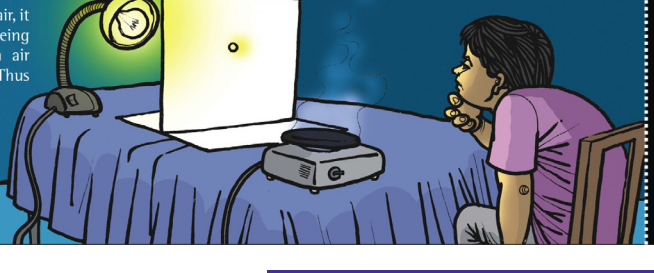
The Stars twinkle at night due to the temperature variation in the air.

When light enters a transparent medium, such as air, it generally gets scattered. The amount of light being scattered depends on the temperature. Warm air bends light less, while cool air bends light more. Thus we are able to see stars twinkle.

THE UNIVERSE YOURS TO DISCOVER
INTERNATIONAL YEAR OF ASTRONOMY 2009
GALILEO Teacher Training Program
© Manthan India

Activity

- Take the card with a small hole punched to simulate a star (Given in the Activity).
- Illuminate the card from one side in a dark room it will show a star like image.
- Keep a hot plate in between the card and the viewer, the image of star will start dancing.
- This is how the Stars Twinkle.



Make the Hole

info.manthan@gmail.com

Find the Words

H A W A T I G I Y D N Q T H E
S G U E M E P S T J O X U Y M
O K X S R O E K I U I C E L I
T A W M X T M K V T S A O P K
S N A O A W S H A E S W R A K
Z N E M B T V B R T I W L B R
Y H I R E I T R G I M N J B Z
X L G S R J E G T L T I B R O
C L E L D U F A H L A N U L Z
S L Q W T J C T K E X C C M Q
P C Y V K K F S Y T X W I L V
D S T W K A S P P A O C L E Z
R E H C N U A L R S B Y Q P R
V F R H T A B B W P P X E F B
V U L P O Q A Q H D R P Z O H

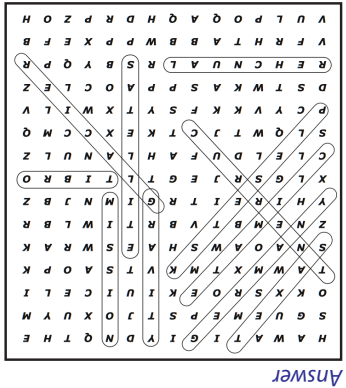
CLIMATE
GERMANY
GRAVITY
MISSION
PLESETSK
TEXAS
CURRENT
GLACIER
LAUNCHER
ORBIT
SATELLITE

Puzzle

Now that the GTTP MoonDays are around the corner nothing like a nice puzzle of an Astronaut exploring the Moon Surface
http://solarsystem.nasa.gov/kids/puzzles.cfm?PuzzleID=12

Constellations

Want to learn the constellations? Try this stars and galaxies globe produced by the European Space Agency (ESA)
http://www.esa.int/esaKIDSen/SEMHKYU7D7F_OurUniverse_0.html



Answer

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http://www.faulkes-telescope.com/node/2186

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