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EDITORIAL

The first news of this issue is about the postponement of *Catch a Star*'s deadline for project submissions.

The Eratosthenes Project joint schools all around Europe on an experiment to achieve a measurement of Earth's Perimeter on June 21st, 2011. Schools have submitted their results on the project page and a group of schools participated on the videoconference .

On this month's issue you can find links to astronomy news the that were published on our EAAE News site in the "It happened last month" section.

On the "Astronomical Observations" section we bring you some suggestions of what can be observed in the night sky in July.

On the " Software and Internet Astronomy" section we will present you Solar Stormwatch an online tool created by the Zooniverse team to allow students to cooperate with professional astronomers on Solar Storm detection and follow-up.

We also bring you an announcement on a new section that is dedicated to provide information about Astronomy Education activities around Europe. People are invited to send us information about relevant courses and activities that might interest to teachers and students.

As usual we also have some activities in the Students Corner and we have selected a beautiful astronomical picture of M17 or this months "Picture Gallery".

We wish you all clear skies during the next month.

The EAAE Webteam

EAAE's Activity News

Catch a Star's deadline has been postponed to October 30th

Due to the requests of many teachers all around Europe, the deadline for the submission of Catch a Star's works has been postponed to October 30th, 2011.

Teachers say that they have done the work with their students but in many cases have not been able to finish the translation of their work to English.

Since July and August are Summer vacations time in almost all countries EAAE has decided to extend the contest until the end of October. This will give students an opportunity to finish their works. It will also be an opportunity for more teachers to apply with works of their students.

Links:
Catch a Star project

Eratosthenes 2011 short report

Once again in 2011 EAAE has launched Eratosthenes Experiment. This year was coordinated by Anna Artigas and Guido Robotti.

On June 21st, 2011, school teachers and students from all over Europe made their measurements and launched the results on the EAAE's webpage of the project. Some teachers also participated on the videoconference promoted for schools to cooperate about the event.

Students measuring the shadow of a gnomon at Legnica, Poland.

Most schools, from Northern Europe to Southern Europe were able to measure the shadow of the Sun due to good weather conditions in most of Europe. Only Stafford Grammar School in the United Kingdom reported bad weather conditions.

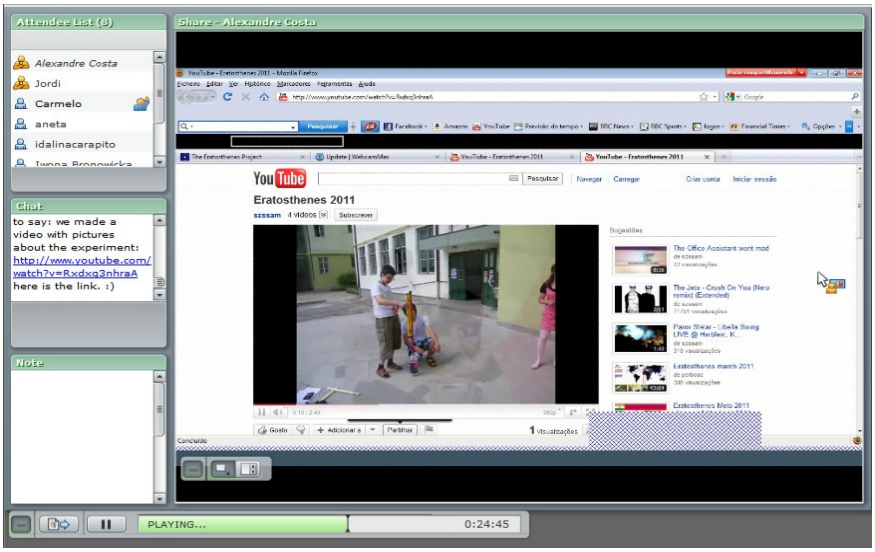
A School Group measuring the shadow of a gnomon at Batalha, Portugal.

Nonetheless the measurement of average of Earth's perimeter was 39864.64 km, a measurement that has a 0.358% error compared to the accepted value of 40007.86 km for the meridional perimeter.

During the video conference that was controlled by Alexandre Costa and Jordi Delpeix Borrell, students from different schools shared their results and the motivation they had in participating this event. All of them showed the interest in participating next year.

A scene from the beginning of the videoconference with some of the participants.

Students had possibility of presenting pictures and some schools also presented videos they already had posted on YouTube about the event.



Sharing a YouTube video nearly at the end of the videoconference..

We hope next edition of Eratosthenes is even better.

It happened last month

Last Month's highlights from EAAE News

- Most Distant Quasar Found
- Catch a Star's deadline has been postponed to October 30th
- Analyzing 3D galaxies
- NASA sets launch date for final Space Shuttle mission
- FermiLab discovers clues to why the Big Bang produced more matter than antimatter
- Neutron star bites off more than it can chew
- NASA online videos provide new approach to teach Science to Public
- Alphabus ready to offer new opportunities
- A different approach to weather science explanations for extreme conditions
- NASA Mission suggests Sun and planets constructed differently
- Star formation at very low density: Is there a limit?
- Dawn nears position for year-long stay at giant asteroid
- CryoSat: Arctic ice map unveiled
- NASA Mars Rover arrives in Florida after cross-country flight
- Asteroid misses Earth by little next Monday
- NASA flights seek to improve view of air pollution from Space
- The Flames of Betelgeuse — New image reveals vast nebula around famous supergiant star
- Pandora's Cluster — A Galactic Crash Investigation
- Galilean School of Higher Education of Padua: Applications are open.
- Cassini observes icy spray of Enceladus' water plumes
- Galileo network contracts signed at Le Bourget
- ESA releases Space App for iPhone and iPod
- NASA Details Achievements Of Lunar Reconnaissance Orbiter
- Reproducing Eratosthenes' Experiment
- Johannes Kepler ATV will become a fireball in today's sky
- Summer Solstice - A chance to measure Earth's perimeter
- Chandra finds massive black holes common in early Universe
- Phobos slips past Jupiter
- Herschel Space Telescope: hot from cold
- NASA Issues Announcement For Solar Electric Propulsion Studies
- European endorsement for ESA's space hazards programme
- Black hole caught eating a star, gamma-ray flash hints
- Recalculating the distance to interstellar Space
- Total Lunar Eclipse visible all over Europe
- Don't miss the total lunar eclipse tonight
- Dark galaxies dominate the Universe
- New arm of the Milky Way galaxy discovered using CO
- NASA spacecraft captures video of asteroid approach
- MESSENGER endures its first hot season
- Nearby galaxy boasts two monster black holes, both active
- New Spacecraft Orbital Views of Mercury
- NASA probes suggest magnetic bubbles reside at solar system edge
- Small Sun-watcher Proba-2 offers detailed view of massive solar eruption
- Supernova SN1987A remnant lights up
- A gush of volcanic gas over Chile
- Dark Matter researchers in the dark
- Rosetta comet probe enters hibernation in deep space
- Images of ISS taken by Paolo Nespoli from the Soyuz
- First images from the VLT Survey Telescope - VST and 268 megapixel OmegaCAM start work
- Aquarius to study the power of Sea Salt
- Solar flare might disrupt Earth communications today
- Springtime at Mars' south pole
- A Mariner 10 Perspective on MESSENGER: A First-person Account
- ESA's "Fly Your Thesis!" 2011 campaign
- Rosetta to sleep through loneliest leg of comet mission
- The hunt for the elusive Higgs
- Opportunity passes "Skylab" crater
- One year in isolation
- New NASA map reveals patterns of tropical forest carbon storage
- How typical is the Milky Way?
- Hot stuff: the making of BepiColombo
- Astronomers observe carbon-atmosphere white dwarf stars with the Hubble Space Telescope
- Mercury's Surface: The Role of Space Weathering
- NGC 6744 - A spiral galaxy that resembles our Milky Way
- Keeping the power on in space
- Observations in June 2011
- Looking at the volatile side of the Moon

ASTRONOMY CALENDAR

July'S CALENDAR

Mount Wilson's Telescope.

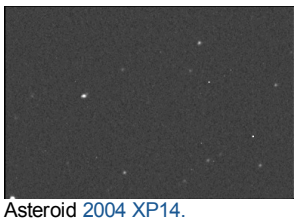
July 1st: Day 182 of the Gregorian calendar.
History: In **1949**, In 1770, o Comet Lexell passes at distance of 2,3 million kilometers from Earth, less than 9 times the distance between Earth and the Moon. In 1917, the 2.5 meter mirror arrived to Mount Wilson. John D. Hooker donated the funding for the glass that was the same kind of glass that was used for the bottles of wine that was used for the wine bottles of the Saint Gobrain company in France.

Observations: New Moon occurs today at 08h54 (UTC).There will be a partial eclipse of the Sun today, but you'll have to be a penguin in order to see it. The Sun's shadow will fall across a remote area of ocean between South Africa and Antarctica.

Noctilucent clouds. .

July 2nd: Day 183 of the Gregorian calendar.
History: In 1967, the gamma-ray satellite Vela was launched with the mission to detect nuclear bomb explosions bit became famous by its detections of Gamma Ray Bursts GRBs.
In 1978, James Christy obtains a picture of Pluto with a clearly longed form. Repeating the observations of its form and its variation were the basis for the discovery of its satellite, Charon.
In 1985, the probe of the Giotto mission was launched. Its goal was to pass close to comet Halley and send back the first images of the core of a comet. The first encounter happened on March 13th, 1986, at a distance of 596 km. Giotto also studied comet P/Grigg-Skjellerup during its mission.

Observations: Noctilucent clouds, also known as polar mesospheric clouds, are most commonly seen in the deep twilight towards the northern latitudes. Noctilucent cloud are not fully understood and seem to be increasing in frequency, brightness and extent during the last years. They are the highest clouds in the atmosphere at heights of around 80 km or 50 miles. Normally too faint to be seen, they are visible when illuminated by sunlight from below the northern horizon whilst the lower parts of the atmosphere are already in the shadow. So now that the Sun is over the northern hemisphere is the ideal time to spot them if you have clear dark night as light is draining from the north western sky long after sunset.



Asteroid 2004 XP14.

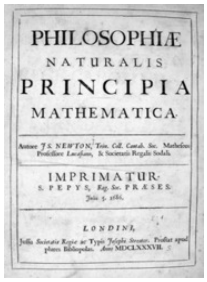
July 3rd: Day 184 of the Gregorian calendar.
History: In 1998 occurred the biggest approach to Earth of Comet C/1998 T1 (LINEAR) at a distance of 0.492 AU.
In 2006, asteroid 2004 XP14 passes at a distance of 432.308 km from Earth.

Observations: Take a look out to the west after sunset, and you should see the planet Mercury above the horizon, and above it will be the thin crescent Moon.

M1-The Crab Nebula..

July 4th: Day 185 of the Gregorian calendar.
History: In 1054 the first written record of a supernova was made by Chinese astronomers. It originated the supernova remnant known as The Crab Nebula also known as M1.
In 1997, the Pathfinder probe landed on Mars.
In 2005, the Deep Impact probe collided with comet Tempel 1.

Observations: The Earth is at Aphelion, the farthest from the Sun for the year. We are now 1.6 million miles farther from the Sun than average.



Principia front page

July 5th: Day 186 of the Gregorian calendar.
History: In 1687 the *Philosophiae Naturalis Principia Mathematica* written by Isaac Newton was published for the first time. The *Principia* as it is known gave the first physical explanation for the movement of the planets and satellites.
In 1998, Japan launched a probe to Mars and becomes one of the nations that are involved in Space exploration. Due to several problems with the Nozomi probe the mission was abandoned about one year later.

Observations: The wanning crescent Moon is in the WSW at dusk. Aim a telescope at the Moon's terminator to see some spectacular craters.

Planetary radar of Yevpatoria

July 6th: Day 187 of the Gregorian calendar.
History: In 2003, The 70 meter planetary radar of Yevpatoria send a METI message in the direction of 5 stars: Hip 4872, HD 245409, 55 Cancri, HD 10307 and 47 Ursae Majoris.
This message will arrive to these stellar systems in April 2036, August 2040, May 2044, September 2044 and May 2049, respectively.

Observations: July is Scorpius' month for southern Europe's countries! The most beautiful of the Summer constellations is now above the horizon at South-Southeast at night fall. If you live at moderate latitudes or you have a vacation at the South of Europe you can see some of its most famous objects, like the open clusters M6 and M7, even with binoculars or a small telescope.

Phobos 1.

July 7th: Day 188 of the Gregorian calendar.
History: In 1746 Giuseppe Piazzi was born. This Italian astronomer became famous for the discovery the dwarf planet Ceres.
In 1959, Venus makes an occultation of the star Regulus. This rare event was used to determine Venus' diameter and the structure of Venus' atmosphere.
In 1988, the Russian probe Phobos 1 was launched. Unfortunately the probe was lost on its way to Mars due to a bad software update between the 29 and 30 of August in the same year. This error was responsible for the impossibility to achieve the correct alignment of the solar panels with the Sun.

Observations: Moon at perigee, at 14:05 (UTC) at a distance of 369 565 kilometers from Earth.

July 8th: Day 189 of the Gregorian calendar.
Observations: First Quarter Moon today at 06h29 (UTC). And finally, tonight the Moon will appear reasonably close to planet **Saturn**.

Artist impression of Voyager 2 and Jupiter

July 9th: Day 190 of the Gregorian calendar.
History: In 1979, the probe Voyager 2 made its flyby by Jupiter.
The discovery of volcanic activity in Jupiter's satellite Io was probably the biggest achievement of the mission

Observations: A little more than half full, the Moon will appear quite close to the star Spica tonight. Spica, a blue giant star, is the brightest star in the constellation Virgo and the 15th-brightest star in our night sky.

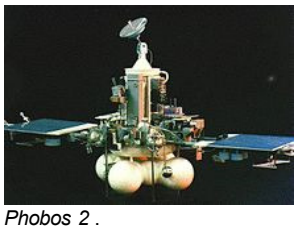
Telstar 1.

July 10th: Day 191 of the Gregorian calendar.
History: In 1962 the first telecommunication satellite called Telstar entered Earth's orbit.

Skylab

July 11th: Day 192 of the Gregorian calendar.
History: In 1801, the French astronomer Jean-Louis Pons makes his first cometary discovery. During the next 27 years he would discover 36 new comets, more than any other person in History (of course SOHO has broke this record by a large number; in December it passed comet 2000 and keeps on counting) .
In 1962 cosmonaut Micolaev stays in orbit for four days, a record in those days. In the same year the first satellite television broadcast was made.
In 1979, Skylab returned to Earth. The debris area of the reentrance was between the Southeast Indic Ocean and parte of Western Australia with very low population.

Observations: Draw a line from bright Arcturus, high at Southwest, until Vega, that is high in the East. At one third of the way between them is the faint constellation Corona Borealis, with its moderately bright alpha star Alphecca, also dubbed as Gemma. At two thirds of the path you can find the Hercules constellation.


Phobos 2 .

July 12th: Day 193 of the Gregorian calendar.
History: In 1988 the Russian probe Phobos 2 was launched. After sending data back to Earth, the probe was lost in January 1989.
In 1999 occurred the biggest approach of comet Tempel 2 to Earth at a distance of 0.654 AU..

Observations: The Moon will appear close to the star Antares tonight. Antares is a red supergiant star, 800 times bigger than the Sun. Antares means "the rival of Mars', and was named due to its reddish colour that makes it look similar to the fourth planet from the Sun.

July 13th: Day 194 of the Gregorian calendar.
Observations: At nightfall in this time of the year Arcturus is high at Southwest over Spica (its exact position depends on the latitude). The kite form of Bootes stretches out above Arcturus.

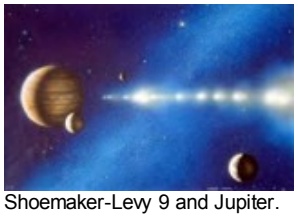
Chandra Space Telescope.

July 14th: Day 195 of the Gregorian calendar.
History: In 1965 the probe Mariner 4 made the first flyby to Mars.
In 2000, Chandra Space Telescope observes X-rays of the oxygen and nitrogen atoms of Comet C/1999 S4. The observations show that the X-rays emitted by comets are produced by collisions of ions that move in the direction opposite to the Sun (solar wind) with the comet's gas.

Observations: Use the night to observe M57 the Ring Nebula.

July 15th: Day 196 of the Gregorian calendar.
History: In 1943 Jocelyn Bell was born. This British astrophysicist was the one that discovered the first radio pulsars.
In 1975 the missions Apollo 18 and Soyuz 19 were launched. These two missions would be responsible for the first international space docking manoeuver (known as Apollo-Soyuz).

Observations: Full Moon occurs today at 06h40 (UTC).


Shoemaker-Levy 9 and Jupiter.

July 16th: Day 197 of the Gregorian calendar.
History: In 1969, the mission Apollo 11 was launched from Cape Kennedy. The lunar module landed on the surface of the Moon on July 20th, 1969, on a spot called "Sea of Tranquility". Neil Armstrong (mission commander) and Edwin E. "Buzz" Aldrin (pilot of the Lunar Module that was dubbed *Eagle*) became the first men to walk on the Moon. Michael Collins (pilot of the Command Module called *Columbia*) remained in orbit around the Moon.
In 1994, comet Shoemaker-Levy 9 colides with Jupiter. The impacts continue until July 22nd.

Apollo-Soyuz patch.

July 17th: Day 198 of the Gregorian calendar.
History: In 1966, the mission Pioneer 7 was launched.
In 1975, Apollo 18 and Soyuz 19 made the first international Space docking (Apollo-Soyuz). The Apollo–Soyuz Test Project (ASTP) entailed the docking of an American Apollo spacecraft with the then-Soviet Soyuz spacecraft. Although the Soyuz was given a mission designation number (Soyuz 19) as part of the ongoing Soyuz program, it was referred to simply as "Soyuz" for the duration of the joint mission. The Apollo mission was not officially numbered, though some sources refer to it as "Apollo 18".
In 2007, the trans-neptunian object 2007 OR10 was discovered.

Observations: Vega is the brightest star at East. Deneb is the brightest to is low left. Bellow Vega to the right is Altair. Vega, Deneb and Altair form the asterism known as the Summer Triangle.

Apollo 11 close-up to the Moon.

July 18th: Day 199 of the Gregorian calendar.
History: In 1966, the Gemini 10 was launched.
In 1969, the Apollo 11 prepares the lunar landing. The hole World is expecting the great moment.

Observations: Take the night to try to make nice pictures of M13 and M92 in the Hercules constellation with your telescope.

Edward Charles Pickering.

July 19th: Day 200 of the Gregorian calendar.
History: In 1846 Edward Pickering was born. Pickering was an American spectroscopy pioneer and would become director of the Observatory of the University of Harvard between 1876 and 1919.This was era when photography started to be used in Astronomy and the photographic plates collection started during Pickering's direction is still a valuable source of data.
In 1912, a meteorite with an estimated mass of about 190 kg explodes over the city of Holbrook, in Arizona, disintegrating into about 16.000 pieces of debris.
In 1985, President George H. W. Bush decides to send for the first time a teacher to Space. The teacher Christa McAuliffe would be the selected teacher on board the Space Shuttle Challenger on mission STS-51-L that on January 28th, 1986, would explode 73 seconds after launch

Observations: Since how long haven't you observed the Wild Duck Cluster (M11)? It's an open cluster that can easily be mistaken as a globular cluster.

July 20th: Day 201 of the Gregorian calendar.
History: In 1969 Neil Armstrong and Edwin Aldrin became the first human beings to land on the Moon. After landing Armstrong informed Mission control "Houston, Tranquillity Base here. The *Eagle* has landed." It was then time to walk on the Moon. After leaving Eagle module there was a stair down to the surface. On the last step Armstrong uttered his famous line "That's one small step for [a] man, one giant leap for mankind".
In 1976 the probe Viking 1 landed on Mars and takes the first pictures of Mars' surface..
In 1994, fragment Q1 of Comet Shoemaker-Levy 9 hits Jupiter.
In 1999 probe Liberty Bell 7 of the Mercury Program was recovered from the Atlantic Ocean.

In 2001, the suborbital flight test Cosmos 1 of a solar sail, was lost due to an unexpected failure of the third rocket.

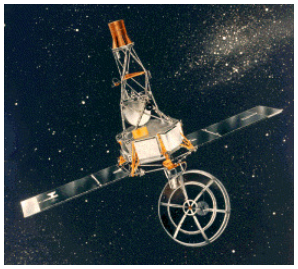
Neil Armstrong's step to the Moon.

Observations: Mercury reaches its greatest eastern elongation away from the Sun. If you have a clear evening sky, try to spot it in the west after sunset?

Luna 15

July 21st: Day 202 of the Gregorian calendar.
History: In 1961, Gus Grissom, flying capsule Liberty Bell 7 of mission Mercury 4, becomes the second American to orbit Earth.
In 1969, the Russian probe Luna 15 smashes against the surface of the Moon when it tries to land.
In 1973 the Russian probe Mars 4 was launched. It reaches Mars in February of 1974. It misses to start orbiting Mars. Nonetheless it sends back some data and images.
In 1998 the astronaut Alan Shepard died.

Observations: The Moon reaches the farthest point in its orbit around the Earth, called apogee, at a distance from Earth of 404 356 kilometers at 22h48 (UTC).



Mariner

July 22nd: Day 203 of the Gregorian calendar.
History: In 1962, Mariner 1 flies erratically during several minutes after launch and before getting destroyed.

Observations: The brightest star at West after dark is Arcturus, moving slowly towards the horizon as Summer goes on. To its right at Northwest is Ursa Major.

LandSat 1.

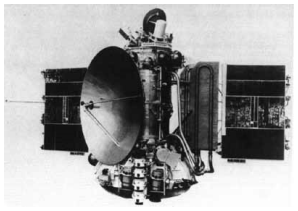
July 23rd: Day 204 of the Gregorian calendar.
History: In 1972, The United States launched the satellite LandSat 1.
In 1995, Comet Hale-Bopp was discovered and becomes visible to naked-eye almost a year later.

Observations: Last Quarter Moon today at 3:02pm Sydney time (05:02 Universal Time).

Copernicus.

July 24th: Day 205 of the Gregorian calendar.
History: In 1969, Apollo 11 returned safely to Earth. The capsule and the astronauts were safely recovered in the Pacific Ocean.

Observations: Slightly less than half full, the Moon will appear close to Jupiter in the morning's sky. Jupiter will be about 12 Moon widths above the Moon. Look a little further east and you'll see Mars too. In between will be the Pleiades, also known as the Seven Sisters. Enjoy the view using binoculars or a small telescope.



Mars 5.

July 25th: Day 206 of the Gregorian calendar.
History: In 1973 the Russian probe Mars 5 was launched.
In 1984 the Russian cosmonaut Svetlana Savitskaya becomes the first woman to spacewalk as she abandoned the station Salyut 7 out to Space.

Observations: Do you have a big telescope and a dark sky. Explore the galactic cluster Abell 2199, a little more than 4º from M13.

July 26th: Day 207 of the Gregorian calendar.
History: In 1958, the Explorer 4 was launched.
In 1963, the first geostationary satellite Syncom 2 was launched.
In 1971 the Apollo 15 was launched. Apollo 15 was the mission of the 4th human landing on the Moon.
In 2005, mission STS-114 of Space Shuttle Discovery was launched. It was the first mission after Columbia's accident in 2003.

George Biddell Airy

July 27th: Day 208 of the Gregorian calendar.
History: In 1801 George Biddell Airy, was born. He became "Astronomer Royal" (honorary title of the director of Greenwich Royal Observatory) between 1835 and 1881.
His many achievements include work on planetary orbits, measuring the mean density of the Earth, a method of solution of two-dimensional problems in solid mechanics and, in his role as Astronomer Royal, establishing Greenwich at the location of the prime meridian.

Observations: In the western sky after sunset, Mercury appears close to the star Regulus.

Charles Perrine.

July 28th: Day 209 of the Gregorian calendar.
History: In 1851 the first photograph of the Sun during a total eclipse was taken. This image allowed the discovery of the solar corona.
In 1867 Charles Dillon Perrine was born. Perrine was an American-Argentine astronomer who discovered the two moons of Jupiter (Himalia in 1904 and Elara in 1905). He was also director of the Argentine National Observatory (now named the Astronomical Observatory of Cordoba).
In 1964 the probe Ranger 7 was launched.

Observations: The crescent Moon will appear very close to the planet Mars in this morning's sky.

Isidor Rabi.

July 29th: Day 210 of the Gregorian calendar.
History: In 1851, A. De Gaspari discovered the asteroid 15 Eunomia.
In 1898, the physicist Isidor Isaac Rabi was born. Rabi won the Nobel Prize for Physics in 1944 for his resonance method for recording the magnetic properties of atomic nuclei.
In 2005, astronomers announced the discovery of Eris.

Observations: The waning crescent Moon is upper left of Jupiter at dawn. The constellation of Hercules remains high in the night sky. Maybe you already know their globular clusters M13 and M92. What about the Turtle Nebula, NGC 6210, or the faint galaxy NGC 6269 through a swarm of even more faint companions?

Apollo 15 crew.

July 30th: Day 211 of the Gregorian calendar.
History: In 1971, the astronauts of the mission Apollo 15 landed on the Moon.

Observations: New Moon occurs today at 18h40 (UTC).

Lunar rover of Apollo 15.

July 31st: Day 212 of the Gregorian calendar.
History: In 1964 , Ranger 7 sends the first detailed images of the Moon, 1000 times better than any telescopic images of the time.
In 1971, Apollo 15 astronauts David Scott and James Irwin drive the first lunar rover.
In 1976, the first pictures of Mars from Viking Lander 1 were presented.
In 1999, the Moon Lunar Prospector was intentionally crashed on the Moon's surface, to try to find water under the crust of the Moon.

Observations: Tonight try to make a picture of the Double Cluster in Perseus.

ASTRONOMICAL OBSERVATIONS

July's Night Sky

After the Solstice, nights are getting slightly longer day after day.

There's a funny effect that results from the night falling earlier: the beginning of the night will show the same stars until autumn. This happens because the sidereal day is 4 minutes shorter than the synodic day which means that we see the same stars a bit earlier every day. Since the the sunset also happens a bit earlier every day the same stellar objects will be visible for some time along the year.

The brightest star in the July night sky is Arcturus in Bootes, which is the second brightest star in the northern night sky after Sirius. Up to the left of Arcturus is a little circlet of stars called Corona Borealis and over to its left, towards the bright star Vega in Lyra, is the constellation of Hercules. There are four stars at the heart of Hercules which form an asterism known as the keystone because of its shape. With binoculars or a small telescope, up the right hand side is a fuzzy object called M13, which is the best globular cluster we can see in the northern night sky. Often overlooked, just above the keystone, is a second globular cluster called M92, which can be found by scanning to the west from Vega. Below Hercules is a large constellation called Ophiuchus.

Stellarium Screenshot of the M13 and M92 location.
(Click on the image to see a bigger version.)

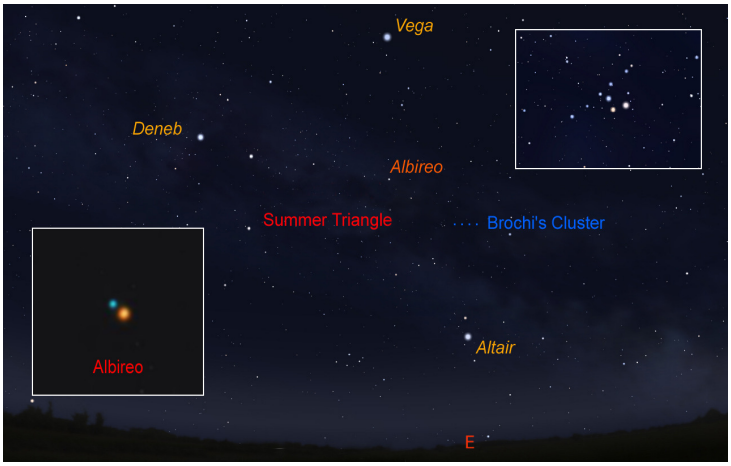
The **Summer Triangle** isn't actually a constellation, but an asterism of three bright stars called **Vega**, **Altair** and **Deneb**, which make up a triangular shape that during the summer months are high in the evening sky. The Summer Triangle helps us to find the less obvious constellations in its vicinity.

Over to the east, fairly high up at 11pm in the middle of month, is Cygnus the swan with Deneb its brightest star. Vega as we said is the brightest star of the Lyra constellation and Altair is the brightest in Aquila.

The three stars all look about the same brightness so it's easy to be induced to think that they are about the same distance away. But this is not the case. Altair is the closest at only 17 light years away and is 13 times brighter than the Sun. Vega, is the next one at a distance 25 light-years away and is 50 times brighter than the Sun.

They might seem the same brightness as Deneb but that's just an illusion. Deneb is actually 100 times more distant than Altair which means it must be far brighter than Altair in terms of its true brightness. Astronomers estimate that Deneb emits around 60 000 times more light than our Sun. The reason Deneb is so bright is because it's a blue supergiant, whose size is around 200 times larger than the Sun. Because supergiants are in the last stages of their lives (blue supergiants are young stars but they don't live long), it's likely that Deneb will become a supernova in the next couple of million years.

The Summer Triangle contains two observational highlights that binoculars or a small telescope will help with. A third of the way from Altair to Vega is an asterism called Brocchi's Cluster or the Coathanger. Up to the left from the Coathanger is the star Albireo which forms the head of Cygnus the swan, and is also the base of the Northern Cross. A small telescope will show that it is a double star, one component is magnitude 3 and amber in colour, the other is magnitude 5 and blue-green. Take your time and try to make some pictures.



The Summer Triangle and the two observational highlights. Image credit: Jodrell Bank Centre for Astrophysics.
(Click on the image to see a bigger version.)

What about the planets?

- **Jupiter** is a pre-dawn object but by the end of July it rises at midnight. A small telescope will show the equatorial bands, look to see if the southern one has come back, and you'll also see the 4 Galilean moons as they weave their way around Jupiter.
- **Saturn** will visible in the evening sky soon after twilight. It is still quite bright so a small telescope will pick it out before it is fully dark. A telescope will see some markings on the surface and also pick up the moon Titan at magnitude +8.
- For **Mercury** it is not a good month. It's just visible above the north-west horizon, its magnitude reduces through the month to +0.7. It reaches greatest elongation from the Sun on July 20 when it will have an elevation of 8° at sunset.
- It isn't good for **Mars** either. It is now a pre-dawn object, but is at a low elevation, moving through Taurus, towards Gemini by the end of

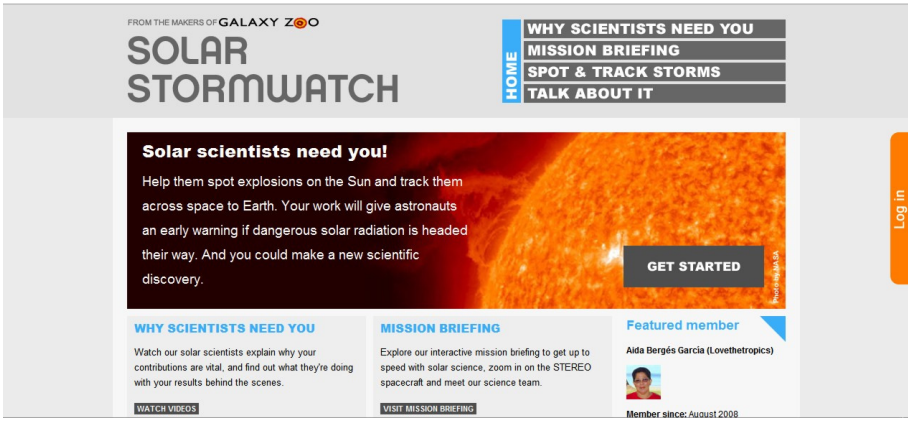
the month.

- **Venus** is also hard to see because is getting close to the Sun in the sky. It might be glimpsed before dawn, low above the horizon, in the east-northeast at the beginning of the month.

SOFTWARE AND ONLINE ASTRONOMY

Solar Stormwatch - Schools can help Solar Scientists

We present you another online tool for astronomy education the has been made by Zooniverse in cooperation with the Royal Observatory of Greenwich and the Rutherford Appleton Laboratory of the Science & Technology Facilities Council.



A screenshot of Solar Stormwatch.

Solar Stormwatch is simultaneously a game and an astronomy tool by which students can help detect solar storms. You don't have to be a science expert to be a brilliant solar storm watcher. But if you'd like to know more about what you're looking at, then you explore Solar Stormwatch's beautiful and interactive zoomable diagrams to find out about the Sun and the STEREO spacecraft monitoring it.

More than a description here find how it works on Solar Stormwatch's webpage.

Link:
Solar Stormwatch site

Astronomy Education's Institutions' News

Galilean School of Higher Education of Padua: Applications are open.

Submitted by Laura Abati

The Galilean School of Higher Education is the possibility for some excellent students, selected by admission tests, to live in a very stimulating contest. Tutors, seminars, special internal courses, cultural exchanges, computer facilities should promote their personal and cultural better formation.

The goal is to allow, following the example of Galileo, an integrated learning method in order to form a highly qualified international group.

The School, is inspired by Galileo who was not only great Astronomer and mathematician, but also a fine philosopher and a man of literature, has beside a scientific group and a humanist.

The location is in an old noble building in the town of Padua. Students can live there (single rooms) and all the facilities are FREE.

The conditions and results are very good in the university and inner courses (media Marks >- 27/30 , single examination>-24/30).

Each year 24 students are admitted. Up to now there are only Italian students but the new actual director , prof. Cesare Barbieri, will be glad to receive also some European students.

The GS has been active for 6 years but isn't spreadly known. Teachers should tell their students about this unique opportunity.

The main points that have to be fulfilled by the applicant is the he/she must be/have :

- Excellent student
- European
- Age < 22
- Enrolled at Padua university for the first time in scientific (not only Astronomy) or humanistic courses
- Entrance examinations in English for not Italian students

The Galilean School offers

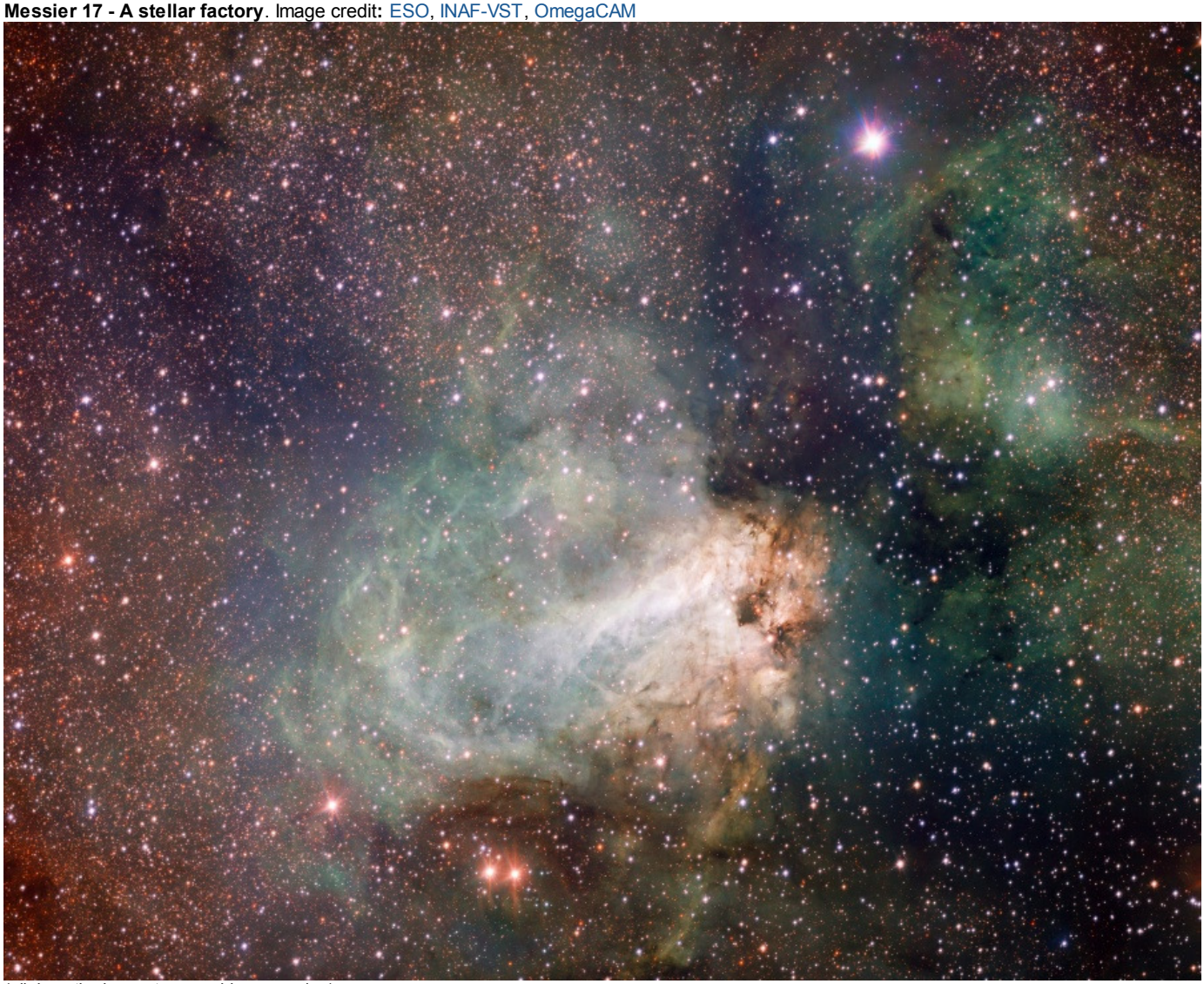
- FREE accommodation (single rooms) and
- FREE facilities (tutors, seminars, internal courses , computer)

Attention: The APPLICATION DEADLINE is September 2nd, 2011.

Link:
Galilean School of Higher Education

PICTURE GALLERY

Messier 17 - A stellar factory. Image credit: ESO, INAF-VST, OmegaCAM



(click on the image to see a bigger version)

This is a fantastic false-color composition of the beautiful nebula M17 also known as the Omega Nebula or the Swan Nebula. This nebula is a star factory that lies some 5,500 light-years away in the nebula-rich constellation Sagittarius. As we look to Sagittarius constellation we are heading to the centre of the Milky Way, and therefore we can see faint details of the region's gas and dust clouds against a backdrop of central Milky Way stars. Stellar winds and high energy radiation from hot, massive stars formed from M17's stock of cosmic gas and dust have slowly carved away at the remaining interstellar material producing the cavernous appearance of this beautiful constellation.

2010 - EAAE - European Association for Astronomy Education. Edited by Alexandre Costa. The contents of the links were active at the date of the publication of this newsletter, but some of them cannot be taken as granted to work in the future. Please don't answer to this e-mail.

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EAAE - European Association for Astronomy Education
c/o European Southern Observatory, Karl Schwarzschild Straße 2,
DE-85748 Garching bei München Germany