

ACTIVITIES IN 2017-18

EUROSTRONOMIA

St. Stanislav's Institution, Slovenia



The report prepared by Martin Čokl and Alenka Battelino

September, 2017

The School Erasmus Clubs were established, The Junior Club at the Primary School and the Senior Club at the High School. Programs and activities were being discussed and planned.

Mr. Čokl, Mr. Golež and Mrs. Battelino took part in the TPM 1 in Mortefontain, France at the partner school San Dominique where the application was reviewed and some changes were discussed and implemented.

Mrs. Battelino took part in the Introductory Conference organized by the Slovenian National Agency at the beginning of the projects of the 2017 call.

October, 2017

There was a call for the competition on logo design.

The survey at the beginning of the project was created and discussed, the final version confirmed.

The accounts on FB, and Twitter were created.

A banner design was prepared by Design Club at St. Stanislav's Institution.

November, 2017

The project was presented at St. Stanislav's Institution to the staff and on the website for all students, parents and the wider public.

December, 2017

Research as a preparation for the first LTTA hosted by St. Stanislav's done by the students

Maja Gruden – Solar Telluric (project work):

Maja made her own model of the Solar Telluric Globe.

January, 2018

Videos as a preparation for the first LTTA hosted by St. Stanislav's done by students

Ana Julija Preseren made the video about The Colonisation of Mars. Another video on solar system was produced by Špela Plevel, Eva Jeraj and Jošt Plevel.

February, 2018

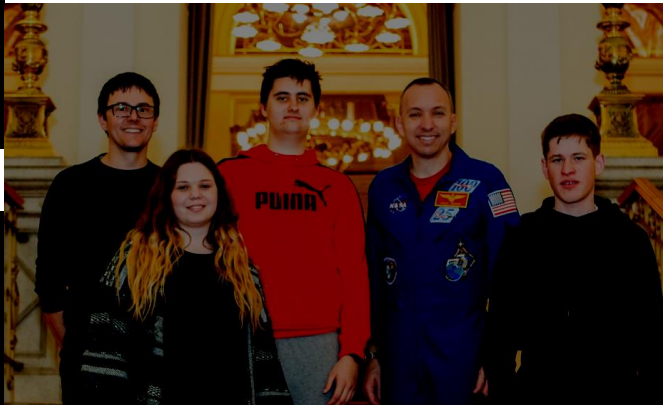
Students and staff worked on activities for the LTTA 1.

March, 2018

Preparation for the LTTA1 were in full swing.

Attending a lecture given by Randy Bresnik:

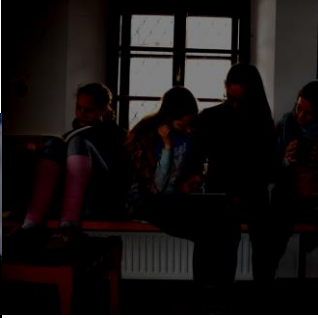
In March 2018, we attended a lecture given by Randy Bresnik. Randy Bresnik is an astronaut from the USA. He was invited to Slovenia by the American Embassy to Ljubljana. The reason he came to Slovenia was because he has some Slovenian roots. He was chosen by NASA as one of the two candidates for a new astronaut in 2004. He participated in the first ESA caves mission where they were simulating Mars mission equipment, and he was also chosen as a commander of Nemo 19 underwater mission where they were working in the Aquarius underwater laboratory that would make them used to closed space and lower gravity in the space. He also took part at the two missions in space. One of those missions included flying with the space shuttle Atlantis SST-129 and performing two spacewalks in 2009. His other mission was to the ISS which he talked about at the meeting.



Astronomy Weekend Camp:

At the end of March (23rd – 25th. March) an astronomy camp was organized in a small alpine village of Koprivnik. There were 12 students of 8th class (13 years old) participating in the camp. At the camp we learned how to build and use the telescope, we observed the sky by day and by night. During day observations we also talked about the possible risks we have to be prepared for when doing observations. At night observations the students' task was to find one star and one object that is not a star (planets, deep sky objects etc.) using the telescope.

Beside observations students were working in the groups of 3 – 5 on the posters of The Colonization of Mars, Black Holes and Exoplanets. We made the model of Hubble telescope, the model of a planetarium, camera obscurae etc. We also explored the map of the Moon and tried to discover different seas and craters on it.





April, 2018

LTTA 1 took place in Slovenia at St. Stanislav's. A member of the National Agency came to visit and observe the activities.

May, 2018

Reports on LTTA1 and other activities were written. Preliminary work on the Dictionary with astronomy terms was done.

June, 2018

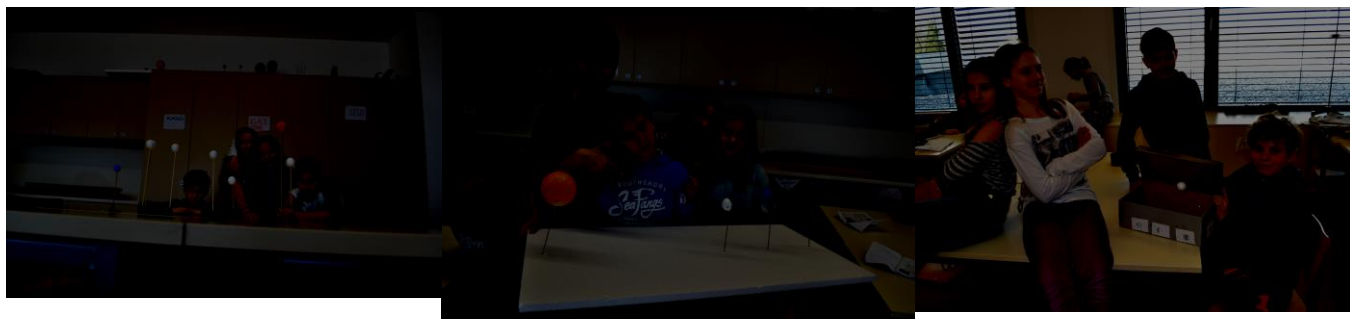
We evaluated the project activities of the first year of the project and made plans for the second year. We started to work on the Handbook for future Erasmus students.

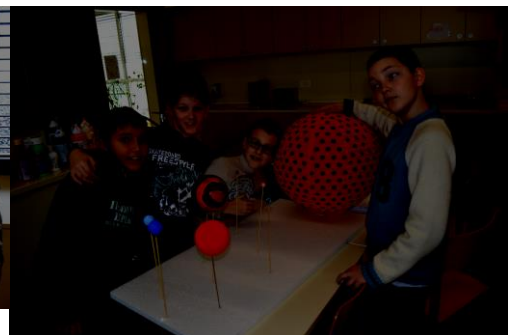
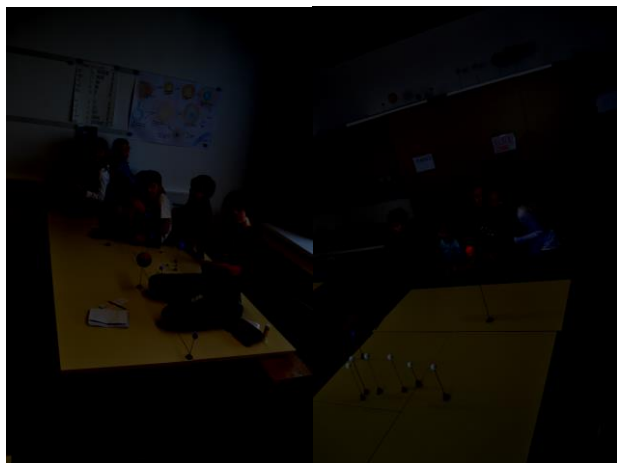
July, 2018

Mr. Čokl and Mrs Battelino took part in the TPM2, together with Alex and Anton.

Project work days in Year 6, primary:

In year 6 of primary school project days of astronomy are organized, which usually take place in February. The title of the days this year was Earth with Big and Small Initials. During astronomy lectures we were exploring the position of Earth in our Solar system and in our Galaxy. When we talked about the Earth, the Sun and the Moon, we explored the phases of the Moon (why they exist, which moon phases are known, when different moon phases occur, which time of the day are they to be observed), why we see the Moon. We also talked about the Sun and the Moon eclipses (what are the necessary positions of the bodies to make them happen, at which moon phase different eclipses are possible, why we don't have eclipses every month). During the Solar system workshop we were painting different sizes of balls, which represent planets in our system. The size of balls were proportional to the size of planets, only the Sun was too small, because we took the measure that the Earth is 1 cm, so the Sun should be 108 cm, but we don't have such a big ball (our Sun was around 8 cm in diameter). We also talked about the distances, but we didn't put the planets at the right distance position, because the size of the system is too big (if the Earth is a 1-cm-ball, the Neptune – a 4-cm-ball is more than 2 km away). Pupils also made the 3D model of a big dipper and the Orion constellation. In this workshop pupils saw that the constellation is only visible from the Earth. If we look from different positions of our galaxy, the constellations are totally different – the big dipper is not any more the big dipper. The pupils also learned that the constellations are the same if we look from the Solar system (the stars are at the same positions). In the constellation Orion we also see stars of different sizes and colors and we talked about why it is so.





OD TU NAPREJ POGLEJ BOLJ PODROBNO. HVALA.

Year 7, Primary Stargazing Session in the village of Kranjska Gora:

In February we had night observations in Kranjska Gora for pupils of year 7. In the sky we saw the constellations Big Dipper, Casiopea, Perseus, Cepheus, Auriga, Taurus, Twins, Orion and Canis Major (big dog). We talked about why the Big Dipper is not a constellation, and how we can help ourselves with this so called asterism. We connect the Big Dipper with the star Polaris and near this star we looked up for the Small Dipper. The pupils saw that the stars in the sky are not the same – some are more reddish and some more white, so we talk about red giants and blue giants. Pupils also saw that the stars are blinking and changing colors (because of the refraction of light in our atmosphere). With the telescope we looked at double cluster Ha-Hi in constellations Perseus, Andromeda galaxy (m31), Orion nebulae (m43), open cluster m37 in Auriga and double star Mizar in the constellation Ursa Major. In the sky pupils also saw Pleiades, which are mostly confused with the Small Dipper. Mr Cokl told the story about the constellations Cepheus, Cassiopea, Andromeda, Persus and Cetus.



Astronomy project in year 2, Primary:

In October we had workshops about the Sun in the second class of the primary school. Using didactic material, Mr Cokl showed the pupils the Earth's motion around the Sun, the Moon's orbit around the Earth, and the Earth's rotation around its own axis. The students particularly liked it when mr Cokl showed them the arc-like path of the Sun across the sky using the globe and camera.





Stargazing activities:

During the year Mr Cokl organized some stargazing activities for different groups: for high school classes and High school astronomy club. On the night sky we looked at different constellations, the planets which were visible, if any, and the deep sky object such as double cluster Ha-Hi, globular cluster m13 in Hercules, Andromeda galaxy (m31), open clusters in Auriga (m36, m37 and m38), planetary nebula m57 in Lyra, orion nebulae (m43) double stars Albireo, eta Lyra and Mizar in Ursa Mayor. One of high school student, Matej, was preparing for a competition to be selected for the international astronomy Olympics, we tried to find as many Messier objects as possible (at first with a map).

Competitions

We prepared students for school and national astronomical competitions. In the primary school there were 21 competitors and in the high school there were 18. The number of competitors is about 70 % larger than the year before. 6 of the competitors qualified also for the national level (3 from secondary and 3 from primary). 4 of them won the golden award. Two students from high school were also invited to the competition for the international astronomical Olympics (among 12 best students in Slovenia they choose 5).

Astronomy Clubs:

At St. Stanislav's Institution there are 2 astronomy clubs. In the primary school there were 8 – 10 pupils that were regular members of the club, at high school there were 10 – 15 regular participants. With these groups we discussed the Solar system, coordinates of the object on the sky (with the questions like, is it possible that the object comes in zenith, how high can some objects come at the sky at some night etc.), constellations, stars (life cycles of stars, what stars are made of, types of stars, double stars – what can we conclude from observations of such stars etc.), deep sky objects (clusters, galaxies, nebulae), telescopes (type of telescopes, mounts, parts of telescope), luminosity of stars (magnitude, Pogson law, the amount of light we get from star and from that calculations of distance to star), Keplers law, energy law, gravitation, dark matter, dark energy, Doppler shift, exoplanets. We also played with astronomical simulations that can be found on website of Faulkes telescope: <http://www.faulkes-telescope.com/> (simulations how to make color images etc.) and website of Nebraska-Lincoln university: <http://astro.unl.edu/> (eclipsing binary, hydrogen energy level etc.). We also played with the program Salsa J (measure the size of Moon crater, making animations about rotation of Jupiter moons, making color images etc.)

