



ARISS EUROPE

Amateur Radio on the International Space Station

News Bulletin April 14, 2016

SUCCESSFUL CONTACT FOR SLOVANSKÉ GYMNÁZIUM OLOMOUC, CZECH REPUBLIC.

The first school ARISS contact in the Czech Republic

On March 8 2016 HAM radio club OK2KYJ established a scheduled radio contact with the amateur radio station aboard the ISS (OR4ISS). The ESA astronaut Tim Peake (KE5UDN) from Great Britain was the radio operator of the space station.

Over 300 people gathered at the Faculty of Science of Palacky University in Olomouc in early morning on Tuesday 8th March 2016. Apart from guests representing the city of Olomouc, heads of various institutions, there were mostly students and teachers from three schools: Slovanske gymnazium Olomouc, Gymnazium Cajkovskeho and Gymnazium Olomouc – Hejcin, present in the contact room. They met together to gain knowledge about the space and the International Space Station (ISS). There were also representative students from each of the three schools, which had together prepared 18 questions to the astronaut.

After a few technical introductions, space and communication related topics (including how amateur radio works) and an excellent speech about the ISS prepared by Mgr. Lukas Richterek Ph. D., the radio club OK2KYJ started to call the astronaut on the board of the ISS. There were two operators of station: Ivo Dostal (OK2VWX) and Vilem Horacek (OK2BC), who were responsible for order of the students and the PTT button. Leo Hucin (OK2UUJ) was the radio coordinator of the contact. Eva Farmackova was the coordination teacher for this event. The radio contact started according to earlier predictions and plans. The radio signal during the contact was strong. The audio was loud and clear.

The transcription of the event by Eva follows:

Ivo: Oscar Radio four India Sierra Sierra calling Oscar Kilo two Kilo Yankee Juliet OVER

ISS: - - -

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ISS/Tim Peak: Hello Oscar Kilo two Kilo Yankee Juliet this is Oscar Romeo four India Sierra Sierra. I hear you weak but readable OVER

Ivo: Good morning this is Ocean Kilo two Kilo Yankee Juliet fifty nine, very nice signal. And now mike over to my colleague. ROGER

Tim: Good morning Oscar Kilo two Kilo Yankee Juliet. I have you five by nine now, and it is a huge privilege to be speaking with the Czech Republic for the first time HAM radio call and I'm ready for your questions. OVER

Eva: Hi Tim, this is Eva and the students with EU 303 contact and a very warm welcome from Olomouc, Czech Republic. Are you ready for your first question? OVER

Tim: I am ready. OVER

Q1. Hi Tim, this is Alzbeta: What is it like eating in zero gravity? OVER

Tim: Hi Alzbeta, you know eating in zero gravity is a lot of fun because you do not have to put anything down, you can just let it float in front of you. Ehm. You do have to be careful not to make too much mess, though. OVER

Q2. Hi Tim, this is Frantisek. My question is: How can you relax on the ISS? Do you have time to watch movies? OVER

Tim: We are normally kept very busy during the week so we don't really relax much. But on the weekends, we do get the time off and we get occasionally to watch a movie or take photographs out of the window or enjoy social media, something like that. OVER

Q3. Hi Tim, this is Vojtech: Is the day/night cycle the same as on Earth? Are you on shifts? OVER

Tim: Hi Vojtech, ehm we don't work shifts so ehm we actually work a normal working day from about 7 in the morning till about 8 o'clock at night. And we stick to Greenwich Mean Time which is half way between Russia and the, and the U.S.A. approximately. So that's the kind of working day we work. OVER

Q4. Hi Tim, this is Barb, this is Karolina with Barbora's question: What was the most difficult or strangest thing to get used to on the ISS? OVER

Tim: It's a great question. I think the most difficult thing is just microgravity and how to orient...., how to orientate yourself. It's quite easy to get disorientated because you could be upside down. You could be working in all sort of different orientations. OVER

Q5. Hi Tim, this is Monika: Does your stay in space have any influence on your health and if so, how? OVER

Tim: Hi Monika, we have to exercise two hours every day to try and stop our bone density from reducing and to try and stop our muscle mass from reducing and also we lose a lot of body fluid and we get increased pressure in our heads. So there are lot of changes going on with our bodies. OVER

Q6. Hi Tim, this is Robin: What do you miss most from gravity on Earth? OVER

Tim: Hi Robin, that's a good question. I miss being able to lie down in my bed at night. You know sleeping in the way it's here is not too bad but it's nothing like a good night sleep that you get in a proper bed with gravity. OVER

Q7. Hi Tim, this is Anna-Marie: How do you deal with the isolation from your family? OVER

Tim: Hi Anna-Marie. Oh, we get to talk to our family from the space station. We can call them and once a week we get a video conference with them as well. So we do, we do keep in touch with our family. But of course we miss them. Six months away from our family is a long time. OVER

Q8. Hi Tim, this is Linda: Is it possible to catch a cold on the ISS or is it a completely sterile environment? OVER

Tim: Hi Linda, that's a great question. You know we shouldn't catch a cold on the ISS where there are no viruses out here. It is quite sterile and the pre-flight team works well. Then new people arriving with the new crews won't bring any diseases with them. But occasionally there have been shuffle crews who had come up to the space station with a cold and that has got round to everybody. OVER

Q9. Hi Tim, this is Tomas: Can you use a 3D printer in the same way as on Earth? OVER

Tim: Hi Tomas, Yes, you can use a 3D printer but it does need to be modified to microgravity. We need to use special materials and special injectors to make sure that they work correctly in microgravity. OVER

Q10. Hi Tim, this is Alzbeta: How do you overcome weightlessness when back on Earth? OVER

Tim: Hi Alzbeta. Well you know it takes us quite a lot of time. It takes about two weeks before we feel standing steady on our feet again and able to do most activities. But it will take up to one year, maybe two years, for our bones density to fully recover when we are back on Earth. And we have a rehabilitation programme that helps us with that. OVER

Q11. Hi Tim, this is Frantisek: Does time pass slower or faster in your daily routine aboard the ISS compared to life on Earth? OVER

Tim: Hi, that's a great question. I think time passes very quickly. We are kept very busy up here. We just go from one activity to the next activity. So days go very fast. OVER

Q12. Hi Tim, this is Vojtech: Do you access the Internet in the same fashion as on Earth? OVER

Tim: We access the Internet by a server which is based in Houston so it's slightly different and it's very slow. It's worse than a dial-up speed normally. So we don't actually do much activity on the Internet. OVER

Q13. Hi Tim, this is Karolina with Barbora's question: Do you have any musical instruments on the ISS? OVER

Tim: Hi, yes we have a guitar and we have a keyboard on the space station. I haven't yet managed to find time to play the guitar but I hope to do so before I leave. OVER

Q14. Hi Tim, this is Monika: Are you planning a stay of a small pet aboard the ISS? OVER

Tim: Hi Monika, Well you know, we don't really have pets on board but we have had some animals in the past. We have had fish on board the space station. We have had ants, some other insects. And on the future vehicle some Japanese expert is bringing some mice up to the space station, which will be returned to Japan and they will be studying their offspring. OVER

Q15. Hi Tim, this is Robin: Are there any special items that you carry with you all the time? OVER

Tim: Hi Robin, well they are not very special but I do carry with me a torch all the time and a Leatherman because they... ehm I use them probably about 5 or 6 times every day. OVER

Q16. Hi Tim, this is Anna-Marie: What do you think is the biggest problem for humans to go beyond low earth orbit? OVER

Tim: Hi Anna-Marie. A great question. I think the biggest problem at the moment is dealing with Radiation. Because, you know, propulsion techniques are getting better, we'll be able to

go to Mars. It may take three, you know, two or three years. But the biggest problem would be how to protect ourselves from the radiation. OVER

Q17. Hi Tim, this is Linda: How are you being filmed during a spacewalk? OVER

Tim: Hi Linda. Well, we have cameras on our helmets that send the signal over radio, and a backpack one which is big enough to be able to carry out the video signal. So that's how we get our images back. And also the Russians used a camera outside and we downloaded the imagery after the spacewalk. OVER

Q18. Hi Tim, this is Tomas: Is it possible to compare life on ISS to somewhere on Earth? OVER

Tim: Hi Tomas. That's a good question. I think probably it's like life on a submarine in many ways, you know. We're quite isolated. We have recycled air; we recycle all of our urine into water. We eat food out of packages which are warmed up. And we do have hot water, too. So it's a kind of environment you might experience living in a submarine. OVER

Eva: Hi Tim, this is Eva. Thank you very much and ARISS for having us today. Best wishes to all aboard the ISS. Be safe. OVER

APPLAUSE while Tim speaking: Hi Eva, Everybody asked brilliant questions today. It has been a real pleasure talking to you in the Czech Republic HAM call this morning and have a great day. Many thanks indeed. Good bye.

Leo: This is Oscar Kilo two Kilo Yankee Juliet. Thank you very much Tim.

Tim: Good bye off to Oscar Kilo two Kilo Yankee Juliet. This is Oscar Romeo four India Sierra Sierra. Good bye. Many thanks indeed. It would be great talking to you again some time. Thank you. Bye bye.

Ivo: Bye bye. AHOJ!

Duration of the radio contact was approximately eight and half minutes and students asked all 18 questions to the astronaut and got intelligible answers for all of them. After the event, there was a lot of happiness and many words of thanks for supporting and organizing this event. One of them was to the ARISS team and its mentor for Europe Armand Budzianowski as well. The event was direct, however in the background the Faculty of Science enabled a connection by landline with the ARISS telebridge station in Italy operated by Claudio Ariotti IK1SLD and Fabio Inglese IW1BND. It was the backup ground station, just in a case of something wrong in the ground station in Czech Republic. In both locations, as well as in Ireland, UK, Italy, Poland were also HAM TV ground stations ready to work to receive video from the ISS and stream it to the Czech Republic, however the HAM TV transmitter on the ISS was off, because of a scientific experiment performed at the same time.

The event was streamed with video to the Internet thanks to AVP UP team and audio was streamed to Echo Link AMSAT conference room (node 101 377) thanks to Claudio Ariotti IK1SLD and Fabio Inglese IW1BND. Listeners of Czech national radio Cesky rozhlas could listen to the event live and the Czech national TV channel CT24 had about 52 thousand viewers at the time of live broadcasting.

After the event organizers and students met with media at a conference. There were reporters from 5 TV stations, several radio stations and press representatives, both local and national. Organizers of the event had received many phone calls and e-mails with thanks

and appreciation. Many teachers throughout the Czech Republic, Slovakia and even one from London, had e-mailed the coordinating teachers expressing thanks, sharing comments, feedback and information about the on-line followers. Even Mr. Michal Vaclavik from the Czech Space Office had found time to e-mail a few words of congratulations to us from Costa Rica's International Conference along with Charles Bolden, Bill Nelson, Franklin Chang Diaz, Takao Doi, Luca Parmitano, Kenneth Cameron, Fei Junlong, Liu Wang and Marcos Pontes. What is more, many teachers of English as a second language keep showing interest and ask for the transcription of the event as well as the recording and video for further use in their English lessons. They have also started using English texts about ISS, space and amateur radio contacts as reading comprehension exercises to make their lessons more interesting and up-to-date.

And apart from the following list of links, many members of the Olomouc Amateur Radio Club OK2KYJ have been asked to speak at AFO (Academic Film Festival in Olomouc) and write articles about the event for various scientific magazines. Some of the photos and articles are planned to be displayed at Olomouc Science Museum with follow-up lectures about the event, ARISS and ISS.

Video from the radio contact is available here,
<https://www.youtube.com/watch?v=obG5VCJxi3g>

Video from the event is available here:
<https://www.youtube.com/watch?v=kXFCa7T4Ncc>

or here (corrected mistakes in audio):
<https://www.youtube.com/watch?v=UX12mg4RiJU>

Links to recording from TV media:
- News in Czech TV 1
<https://www.youtube.com/watch?v=TYqi0H999IE>

- News in Prima TV News
<https://www.youtube.com/watch?v=tgzj5IGgvQk>

- News in Nova TV
<https://www.youtube.com/watch?v=OlZsIq3ayII>

Audio from the event is available here:
http://exfyz.upol.cz/didaktika/iss/soubory/ariss_stream-connection.mp3
or here:
<http://ariss.pzk.org.pl/OK/EU/303/audio/TimPeake08March2016-by-OK2KYJ.mp3>

Audio with astronaut's answers recorded on 145.800MH FM by Eskil van Loosdrecht SM5SRR
<http://ariss.pzk.org.pl/OK/EU/303/audio/TimPeake08March2016-by-Eskil-SM5SRR.mp3>

Here are links to photo galleries:
<http://exfyz.upol.cz/didaktika/iss/foto/dend/index.html>

And links to video and text news from the event coverage by media:

Here you are link to movie with photo summary of the event:
<https://www.youtube.com/watch?v=b-v9m375aSg>

- ČT: Studio 6 (<http://www.ceskatelevize.cz/ivysilani/1096902795-studio-6/216411010110308-studio-6-ii/obsah/457573-cesi-v-primem-spojieni-s-kosmonauty-z-iss>)
- Události ČT1 (od času 44:53) (<http://www.ceskatelevize.cz/porady/1097181328-udalosti/216411000100308/>)
- Zprávy (čas 19:00) (<http://www.ceskatelevize.cz/ivysilani/1178166846-zpravy/216411017000308>)
- Události v regionech (<http://www.ceskatelevize.cz/ivysilani/10122978233-udalosti-v-regionech-ostrava/416231100030308-udalosti-v-regionech/obsah/457762-prvni-radiove-spojieni-s-iss-v-historii-ceska>)
- Český rozhlas (http://www.rozhlas.cz/olomouc/zpravy/_zprava/olomoucti-studenti-se-jako-prvni-v-cesku-spojili-s-mezinarodni-vesmirnou-stanici--1591626)
- České noviny (ČTK) (<http://magazin.ceskenoviny.cz/zpravy/olomoucti-studenti-se-jako-prvni-v-cr-radiove-spojili-s-iss/1323898>)
- Žurnál UP (<http://www.zurnal.upol.cz/prf/zprava/clanek/gymnaziste-hovorili-s-astronautem-iss-spojieni-vyslo-nad-ocekavani/>)
- ČT 24 (<http://www.ceskatelevize.cz/ct24/domaci/1718011-olomoucti-studenti-navazali-spojieni-s-iss-mluvili-s-britskym-astronautem>)
- TV Nova (<http://tn.nova.cz/clanek/vesmirny-kontakt-olomoucti-studenti-se-uspesne-spojili-s-iss.html>)
- TV Prima (po čase 19:00) (<http://play.iprima.cz/zpravy-ftv-prima/zpravy-ftv-prima-8-3-2016>)
- Aktualne.cz (<http://zpravy.aktualne.cz/regiony/olomoucky/olomoucti-studenti-se-jako-prvni-v-cr-radiove-spojili-s-vesm/r%7E4a1da92ae50c11e59045002590604f2e/>)
- Denik.cz (http://www.denik.cz/z_domova/olomoucti-studenti-se-jako-prvni-v-cr-radiove-spojili-s-iss-20160308.html)
- E15.cz (http://e-svet.e15.cz/technika/olomoucti-studenti-se-jako-prvni-v-cesku-spojili-s-kosmonautem-z-iss-1277626#utm_source=hp&utm_medium=selfpromo&utm_campaign=e15rss)
- IDnes.cz (http://olomouc.idnes.cz/olomoucti-studenti-navazali-spojieni-s-iss-fj6-/olomouc-zpravy.aspx?c=A160308_094729_olomouc-zpravy_klu)
- IHned.cz (<http://domaci.ihned.cz/c1-65197290-z-olomouce-az-na-vesmirnou-stanici-studenti-se-jako-prvni-v-cesku-radiove-spojili-s-iss>)
- Impuls.cz (http://regiony.impuls.cz/olomoucti-studenti-navazali-spojieni-s-iss-fj6-/olomoucky-kraj.aspx?c=A160308_111751_imp-olomoucky_kov#utm_source=rss&utm_medium=feed&utm_campaign=iregiony&utm_content=main)

- Lidovky.cz (http://www.lidovky.cz/olomouckym-studentum-se-podarilo-jako-prvnim-v-cesku-spojiti-se-s-iss-1j7-/zpravy-domov.aspx?c=A160308_100029_In_domov_ELE)
- Neviditelný pes (http://neviditelnypes.lidovky.cz/veda-kosmicka-stanice-ve-skole-dei-/p_veda.aspx?c=A160312_161300_p_veda_wag)
- Novinky.cz (<http://www.novinky.cz/veda-skoly/396998-olomoucti-gymnaziste-navazali-jako-prvni-v-cr-spojieni-s-iss.html>)
- Olomoucká drbna (<http://www.olomouckadrbna.cz/zpravy/spolecnost/2352-olomoucti-studenti-se-zive-spojili-s-vesmirnou-stanici-iss-a-vyzpovidali-astronauta-tima-peaka.html>)
- Olomoucký deník (http://olomoucky.denik.cz/zpravy_region/olomoucti-studenti-jako-prvni-v-cr-mluvili-pres-radio-s-kosmonautem-na-iss-20160308.html)
- Tyden.cz (http://www.tyden.cz/rubriky/veda/vesmir/olomoucti-studenti-navazali-spojieni-s-iss-a-mluvili-s-astronautem_375184.html)

Page with more information and updates:

<http://exfyz.upol.cz/didaktika/iss/>

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