

An estimated schedule of the two-day festival “Look at the Earth from space”

1st day

	Proposed options	Unit replacement options (material is not repeated – different emphasis; could be included instead of any other block)
10.00	<p>Sample program of the two-day festival “Look at the Earth from space” (What are the images of the Earth from space and how to work with them?) The number of participants is limited only by the room capacity. Age 12+. <i>Requirements for technical equipment and for the room: a lecture hall with the possibility of making presentations.</i></p>	<p>Lecture “From a balloon to video from the space. A brief history of satellite imagery”. The number of participants is limited only by the room capacity, age 12+. <i>Requirements for technical equipment and for the room: a lecture hall with the possibility of making presentations.</i></p> <p>Lecture “Earth images from the space: myths and reality”. The number of participants is limited only by the room capacity, age 12+. <i>Requirements for technical equipment and for the room: a lecture hall with the possibility of making presentations.</i></p> <p>Lecture “Earth images from the space for territory management”». The number of participants is limited only by the room capacity, age 12+. <i>Requirements for technical equipment and for the room: a lecture hall with the possibility of making presentations.</i></p> <p>Lecture “The world of modern satellites”. The number of participants is limited only by the room capacity, age 12+. <i>Requirements for technical equipment and for the room: a lecture hall with the possibility of making presentations.</i></p>

<p>11.30 Express-project “Land use and territory management: a view from space”.</p> <p>(The purpose of the express project – analysis of the region development in recent years by analyzing archival images of the Earth from space).</p> <p>Age 12+.</p> <p>Adults (students, graduate students teachers, tutors) are invited. Work in groups adults + children (1+3) is possible, total 15 children and 5 tutors (20 people). The number of participants depends on the number of computers in a room. Work only with children or only with adults is also possible (20 people maximum).</p> <p><i>Requirements for technical equipment and for the room:</i></p> <ul style="list-style-type: none"> - computer class - a computer for each participant, - Internet access via cable connection (not WiFi!!) - stable fast Internet is important for the simultaneous work of all participants in the master class with voluminous data and maps on geoportals. <p><i>Note: Each participant should have his own e-mail inbox – it will be required to register on geoportals and exchange links.</i></p>	<p>Master class “Black spots of our planet – from dump to dump”.</p> <p>(Dumps in different regions and its positioning with help of open space images and geoportals).</p> <p>Age 12+. Adults (students, graduate students teachers, tutors) are invited.</p> <p>Work in groups adults + children (1+3) is possible, total 15 children and 5 tutors (20 people). The number of participants depends on the number of computers in a room. Work only with children or only with adults is also possible (20 people maximum).</p> <p><i>Requirements for technical equipment and for the room:</i></p> <p><i>Computer class (minimum 10 computers (1 computer for 2 people) with Internet access via cable connection (not WiFi!!).</i></p>
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		<p>Master class “Find white on white” (a master class on a crowdsourcing project to search for harp seal whelping grounds and seal pups, massively dying during ice pilotage in the White Sea).</p> <p>Age 12+.</p> <p>Adults (students, graduate students teachers, tutors) are invited. Work in groups adults + children (1+3) is possible, total 15 children and 5 tutors (20 people).</p> <p>The number of participants depends on the number of computers in a room. Work only with children or only with adults is also possible (20 people maximum).</p> <p><i>Requirements for technical equipment and for the room:</i></p> <ul style="list-style-type: none"> - computer class - a computer for each participant, - Internet access via cable connection (not WiFi!!) - stable fast Internet is important for the simultaneous work of all participants in the master class with voluminous data and maps on geoportals. <p><i>Note: Each participant should have his own e-mail inbox – it will be required to register on geoportals and exchange links.</i></p>
13.30	Lunch break	

<p>14.30</p>	<p>Training on working with open sources of geospatial data and satellite imagery. Age 12+. Adults (students, graduate students teachers, tutors) are invited. Work in groups adults + children (1+3) is possible, total 15 children and 5 tutors (20 people). The number of participants depends on the number of computers in a room. Work only with children or only with adults is also possible (20 people maximum). <i>Requirements for technical equipment and for the room:</i> - computer class - a computer for each participant, - Internet access via cable connection (not WiFi!!) - stable fast Internet is important for the simultaneous work of all participants in the master class with voluminous data and maps on geoportals. <u>Note:</u> Each participant should have his own e-mail inbox – it will be required to register on geoportals and exchange links.</p>	
<p>16.00</p>	<p>Quiz “Live map” Work skills with open sources of data, first steps to decoding. Original objects on space images. Age 10+. Adults (students, graduate students teachers, tutors) are invited. Work in groups adults + children (1+3) is possible, total 15 children and 5 tutors (20 people). The number of participants depends on the number of computers in a room. Work only with children or only with adults is also possible (20 people maximum). <i>Requirements for technical equipment and for the room:</i> - computer class – a computer for each participant, - Internet access via cable connection (not WiFi!!) - stable fast Internet is important for the simultaneous work of all participants in the master class with voluminous data and maps on geoportals.</p>	

2 day

	Proposed options	Unit replacement options (material is not repeated – different emphasis; could be included instead of any other unit)
10.00	<p>Seminar for teachers “Space imagery and geospatial data in the projects of schoolchildren”. The number of participants is limited only by the room capacity. Teachers, parents and interested adults are invited.</p> <p><i>Requirements for technical equipment and for the room: a lecture hall with the possibility of making presentations.</i></p>	
11.30	<p>Master class “Space Fire Unit” (fire detection on Earth images from space).</p> <p>Age 12+. Adults (students, graduate students teachers, tutors) are invited. Work in groups adults + children (1+3) is possible, total 15 children and 5 tutors (20 people). The number of participants depends on the number of computers in a room. Work only with children or only with adults is also possible (20 people maximum).</p> <p><i>Requirements for technical equipment and for the room:</i></p> <ul style="list-style-type: none"> - computer class - a computer for each participant, - Internet access via cable connection (not WiFi!!) - stable fast Internet is important for the simultaneous work of all participants in the master class with voluminous data and maps on geoportals. <p><i>Note: Each participant should have his own e-mail inbox – it will be required to register on geoportals and exchange links.</i></p>	
13.30	Lunch break	

<p>14.30</p>	<p>Lecture “How to «catch» a satellite?”</p> <p>For the participants of Engineering Training and other interested.</p> <p><i>Requirements for technical equipment and for the room: a lecture hall with the possibility of making presentations.</i></p>	<p>Lecture “How satellites survive?”</p> <p>(Conditions on orbit, brief classification of artificial satellites, main systems of artificial satellites). The number of participants is limited only by the room capacity.</p> <p>Age 14+.</p> <p><i>Requirements for technical equipment and for the room: a lecture hall with the possibility of making presentations.</i></p>
<p>16.00</p>	<p>Master class “Satellite orbit calculation”</p> <p>(Kepler’s laws, Kepler’s orbital elements, first space speed, work with Orbitron program). It is possible to include an additional module with programming elements. Participants interested in computer science, astronomy and physics are invited. The number of participants is limited only by the room capacity.</p> <p>Age 14+.</p> <p><i>Requirements for technical equipment and for the room: a lecture hall with the possibility of making presentations + board.</i></p>	

Additional unit (could be included instead of any other)

1) Art unit

<p>2-3 hours</p>	<p>Art master class “Images of Earth from space”. Group of 10 people. Age 8+.</p> <p>It is possible to increase the number of participants till 20 persons if an adult volunteer helps our lead.</p> <p><i>Requirements for technical equipment and for the room:</i></p> <p><i>Each participant should have:</i></p> <ul style="list-style-type: none"> - a workplace (a table, a chair) - 2 sheets A3 (paper for drawing) - set of brushes of different sizes (squirrel/marten, synthetics), not less 3 ps., paints (watercolors, minimum 12 colors), simple pencil, eraser, water tank, sponge, a rag/napkin to maintain a clean workplace. <p><i>Also need:</i></p> <ul style="list-style-type: none"> - access to water; - computer with internet access + projector + screen (for making presentation); - 3 charged laptops (for parallel demonstration of satellite images during master class); - a pack of disposable plastic plates (use as a palette) – one plate for 1 person; - a pack of A4 white paper (for drafts); - paper towels (1 roll for a group); - scissors; - pencil sharpener.
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2) Work unit with highly detailed satellite images

2 hours	<p>Master class “Highly detailed space imagery for environmental monitoring” (particularities, advantages and disadvantages, areas of use, specialized sites and portals for imagery order, including onduty4planet.com);</p> <p>Age 12+. Adults (students, graduate students teachers, tutors) are invited. Work in groups adults + children (1+3) is possible, total 15 children and 5 tutors (20 people). The number of participants depends on the number of computers in a room. Work only with children or only with adults is also possible (20 people maximum).</p> <p><i>Requirements for technical equipment and for the room:</i></p> <ul style="list-style-type: none"> - computer class - a computer for each participant, - Internet access via cable connection (not WiFi!!) - stable fast Internet is important for the simultaneous work of all participants in the master class with voluminous data and maps on geoportals. <p><i>Note: Each participant should have his own e-mail inbox – it will be required to register on geoportals and exchange links.</i></p>
2 hours	<p>Master class “Discovery of natural dumps on high-resolution satellite images”</p> <p>Age 12+. Adults (students, graduate students teachers, tutors) are invited. Work in groups adults + children (1+3) is possible, total 15 children and 5 tutors (20 people). The number of participants depends on the number of computers in a room. Work only with children or only with adults is also possible (20 people maximum).</p> <p><i>Requirements for technical equipment and for the room:</i></p> <ul style="list-style-type: none"> - computer class - a computer for each participant, - Internet access via cable connection (not WiFi!!) - stable fast Internet is important for the simultaneous work of all participants in the master class with voluminous data and maps on geoportals. <p><i>Note: Each participant should have his own e-mail inbox – it will be required to register on geoportals and exchange links.</i></p>

The event ends at 17.00

**** There is a break 10-15 minutes in the end of every hour.*

The approximate number of teachers and engineers working on the seminar – 4-7 persons.