MILSET STEAM PHOTO CONTEST 2022 REPORT

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The International Movement for Leisure Activities in Science and Technology (MILSET) organised the **edition 2022** of the **MILSET STEAM Photo Contest (SPC)** from April to August 2022. The SPC aims at creating a leeway for youth to express what they observe within science, in photos creatively. The activity is free and open to participants of 13 to 25 years old from all over the world.

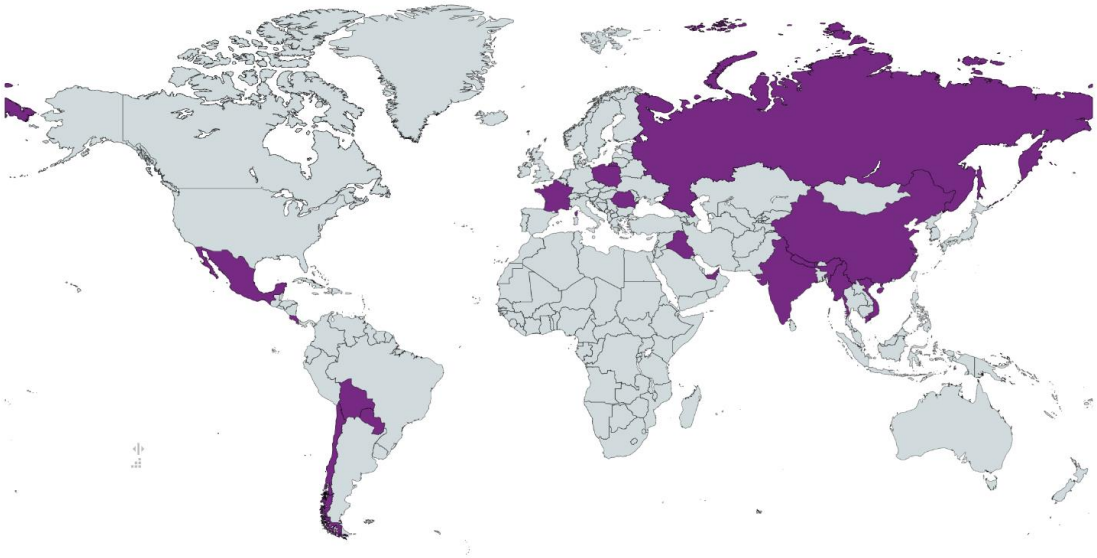
The **goals** of this activity are:

- Engage youth in science, technology, engineering, arts, mathematics (STEAM) by:
  - Exploring visual aspects of STEAM through the art and science of photography
  - Capturing images to demonstrate and communicate STEAM concepts and phenomena
  - Applying STEAM techniques to the capture of digital photos
- Build a collection of STEAM photos by youth worldwide to be used by MILSET and its member organisations.

Photo Eligibility

- Each contestant may submit a maximum of three photos for judging. An online form must be completed
- Any photo that demonstrates, communicates or explains a scientific, technological, engineering, or mathematical concept or phenomenon is eligible.
- The online form requires the contestant to describe the concept briefly or phenomenon associated with each photo.
- Photos must be the sole work of the contestant.
- Photos must be captured using a digital camera – photos created by software are not permitted
- Processing, including cropping and adjustments to correct or enhance exposure or colours, is acceptable; the addition, removal or distortion of meaningful content is not permitted.
- Photos must not include a watermark or descriptive text.

MILSET SPC 2020 is free of charge activity addressed to all youth worldwide. During the registration period from **April to August 2022, 178 photographs from 17 countries were received.** The participants could submit from 1 to 3 photos, and their scientific explanation in the registration system developed. From 134 participants, 37% were adults (from 18 to 25 years old) and 63% minors (underage).



Each participant was requested to upload the photo(s) with its scientific explanation. For those participants under age (>18 years), a parent consent form was additionally requested.

The photographs received went through the following evaluation phases:

1. **Compliance of Rules:** During this step, all photographs were evaluated regarding their compliance with the rules (participant age within the range allowed, the scientific explanation in English, photographs without visible modifications, etc.). Those that followed the rules went to the next phase.

2. **Scientific explanation & quality of the image:** by this phase of evaluation, the jury defined the scores of the photographs based on the criteria mentioned below:

No.	***Description***	***Rating***
Photo Criteria – Technical Qualities	***Rate each criterion from 0 to 5 points***	
1	Exposure	
2	Colour Balance	
3	Sharpness, Bokeh and Blur	
4	**Colour photo**: Hue and Saturation or **Black and white photo**: Tonality and contrast	

Photo Criteria – Creativity, Originality and Aesthetics	***Rate each criterion from 0 to 5 points***	
5	Format and Framing	
6	Presence and Placement of Primary Subject	
7	Lighting (Natural or Artificial)	
8	Shapes and Lines	
9	Picture Depth (use of multiple planes)	
10	Dynamics between Key Picture Elements	

Photo criterion – STEAM Relevance	***Rate this criterion from 0 to 20 points***	
11	How well is the STEAM concept or phenomenon captured in the photo	

Informational Content Criterion	***Rate this criterion from 0 to 15 points***	
12	Demonstration of an in-depth understanding and knowledge of the STEAM concept or phenomenon presented in the photo	

Effective Communication Criterion	***Rate this criterion from 0 to 15 points***	
13	Effective communication in rendering the STEAM concept or phenomenon accessible to the non-scientific observer	

	TOTAL	

After all this process only 292 photographs reached the second phase.

It was developed a MILSET SPC Virtual Gallery, space where the 10 photographs best scored are shown.

https://spc-virtual.milset.org/2022/

The 1st , 2nd and 3rd places were obtained by:

1st Place

Author: **TIAN XIA**
Country: **China**
Title: **"Aurora In Narvik, Norway"**
Prize: **250 Euros**

Aurora is a large-scale discharge process around the earth. As part of the solar wind, charged particles rush to the earth at a speed of 3 million kmh. When they reach near the earth, they are captured by the earths magnetic field, causing some of them to approach the north and south poles along the field line. When these charged particles enter the polar upper atmosphere, they collide with atoms and molecules in the atmosphere, which will produce 1 million trillion energy. Small particles in the earths atmosphere will release energy; for instance, oxygen atoms emit green or red light, oxygen molecules emit red or yellow light, and nitrogen molecules emit purple or pink light.

2nd Place

Author: **DU LI**
Country: **China**
Title: **"Flat Area"**
Prize: **National Geographic membership**

If you stand by a lake and look down at the water beneath your feet, you will see that the water is transparent and not particularly reflective; If you look at the lake in the distance, you will see that the water is not transparent, but the reflection is very strong. This is called the Fresnel effect. This photo was taken in Xia pu tidal-flat area in Fujian Province, China. In the evening, after the low tide, fishermen are fishing for shellfish in the shallow water. The sunset shines on the water, reflecting the light and shadow, creating a unique scene of abundance.

3rd Place

Author: **ZHUOER MIAO**
Country: **China**
Title: **"The Blooming Of Dew"**
Prize: **National Geographic membership**

In the morning scene shown in the photograph, the spiders web above a succulent plant is decorated with dewdrops like a veil of crystal, making the flowers even more delicate. Dewdrop formation is a liquefaction phenomenon. In the warm season, the air is relatively humid, and when the temperature drops gradually, the water vapor in the air cools and liquefies into small droplets that fall on plants and form transparent dewdrops which shine incredibly bright due to total internal reflection. At the same time, the nano-scale natural hydrophobic layer on the plant surface allows the landscape to be preserved.

People Choice award

Author: **SEBASTIAN FLORES LARREA**
Country: **Paraguay**
Title: **"Crypsis Or Art of Camouflage to Survive"**
Prize: **National Geographic membership**

The butterfly uses camouflage or crypsis as a defense method, especially in these seasons of the year where its colors become more opaque and serve to hide, we can also appreciate in this type of butterfly its points that are like eyes that serve to confuse to the attackers.

A deep appreciation to the following people who made possible this activity:

JURY COMMITTEE

- Normand Fafard - Canada MILSET SPC Jury President
- Seyed Mohamed Hasheminasb - Iran
- Guy Anduze - France
- Thierry Legault - France
- Serge Chevrel - France

TECHNICAL COMMITTEE

- Berenice Suarez Rodriguez (MILSET Managing Director)
- Lisette Vela Reyes (MILSET Communication Manager)
- Jose Alberto Garcia Torres (MILSET IT Coordinator)

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- Carole Charlebois (MILSET General Secretary & Treasurer)
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- MILSET Members that promoted the activity within their environment