

宇宙から

届く不思議を

伝えよう

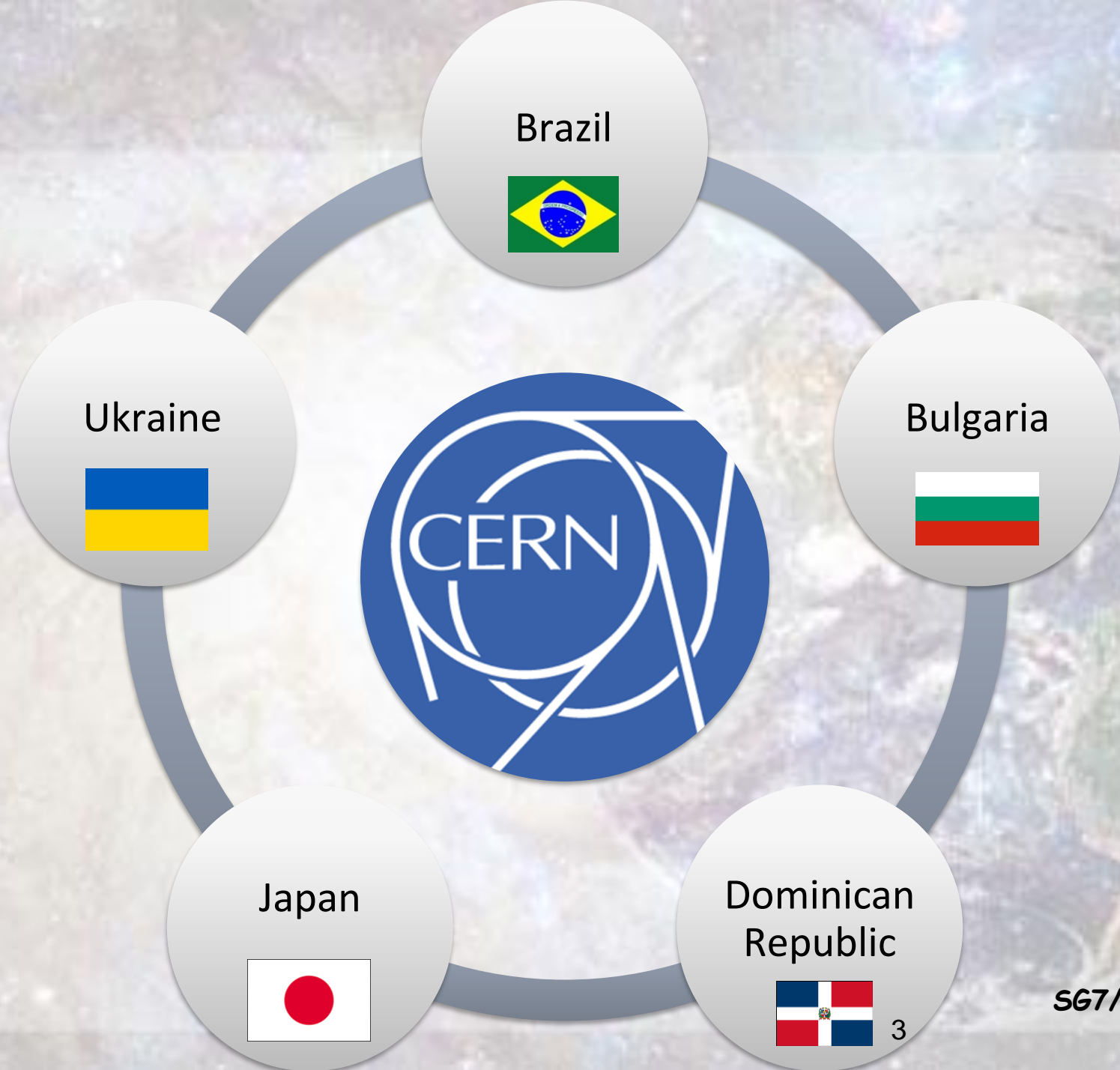




International
Teacher Weeks
Programme 2017

Cosmology

Study Group 7



Our inspiration with John Ellis!



... and we start!!!





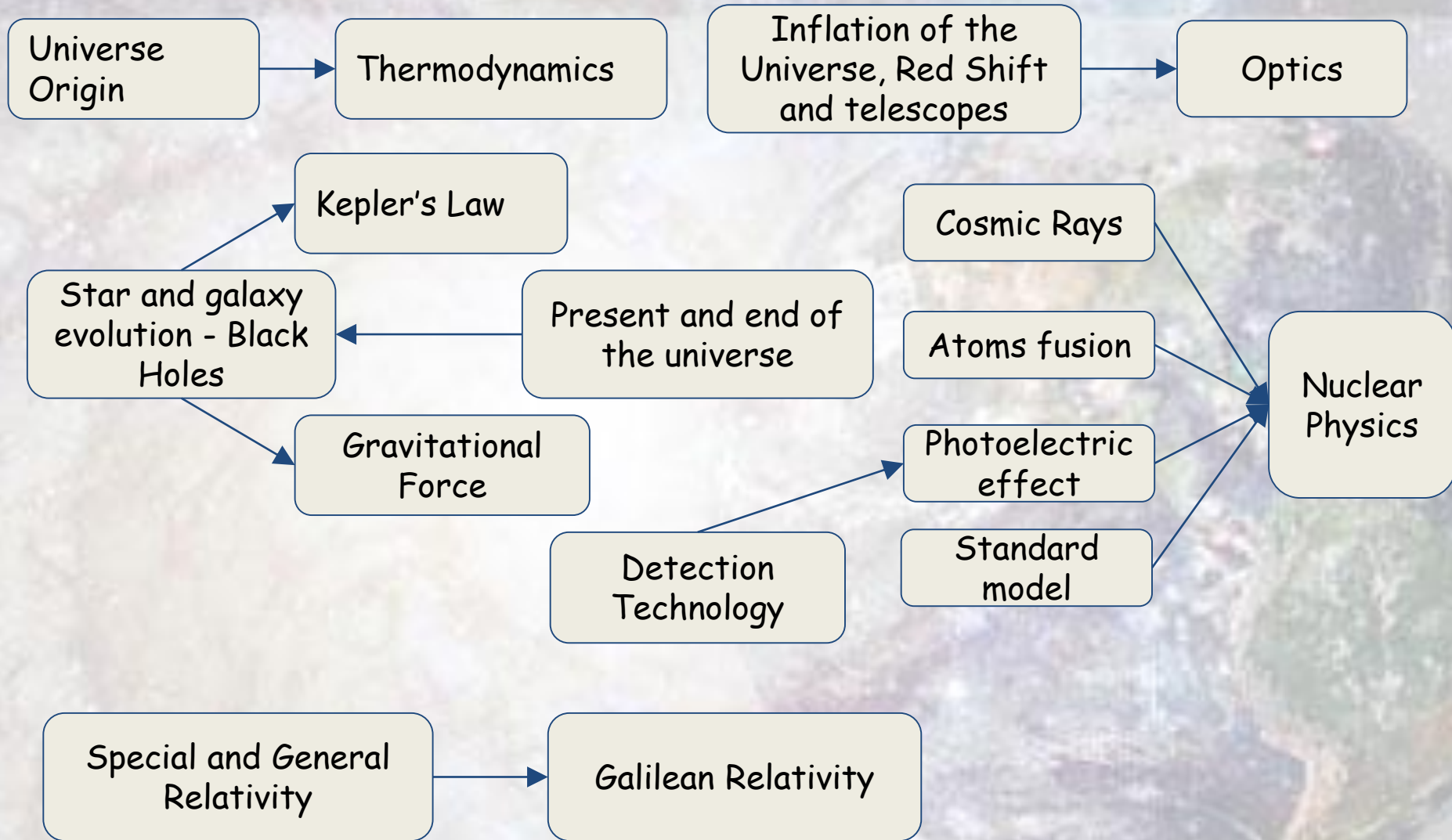
Curriculum

Brazil/Dominican Republic/Japan: University

Bulgaria: VII to XII years of education

Ukraine: 3 year of High School

Classroom connections



Teacher main goals and tasks

- provide general and specialized system knowledge of astronomy and astrophysics;



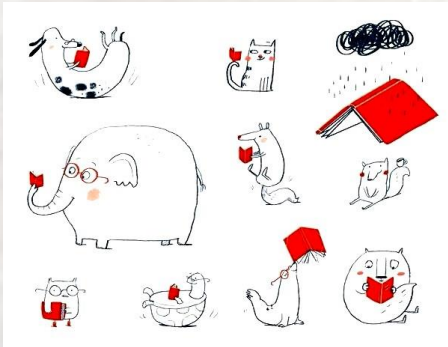
- to form skills of scientifically grounded thinking, logical and consistent expression of own thoughts;



- to develop communication abilities;

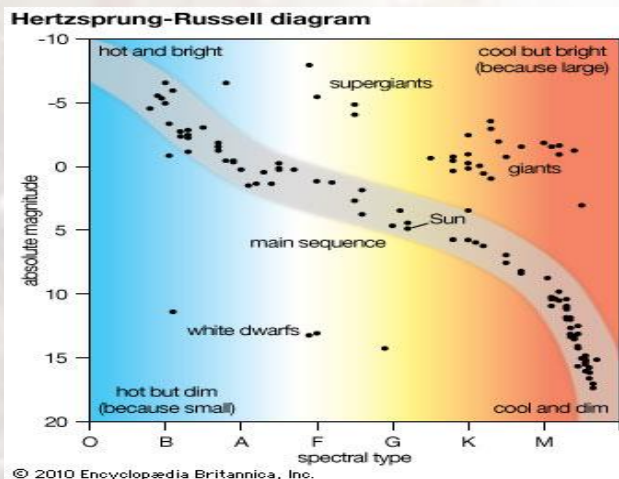


- to develop the ability to independently work with information sources, to systematize, generalize the information obtained and to use it.



Main concepts what students should to know

- general information of galactic astronomy;
- elements of cosmology;
- cosmological paradoxes and principles;
- models of the universe;
- Fundamentals of astrophotometry and spectroscopy;
- laws of equilibrium radiation;



- basic information about the solar system;
- on the physical nature of the stars and the main stages of their evolution;
- the main sources of star energy;
- physical content of the Hertzsprung-Russell chart.
- to solve the exercises on the red shift and the law of Hubble.

Education before and now

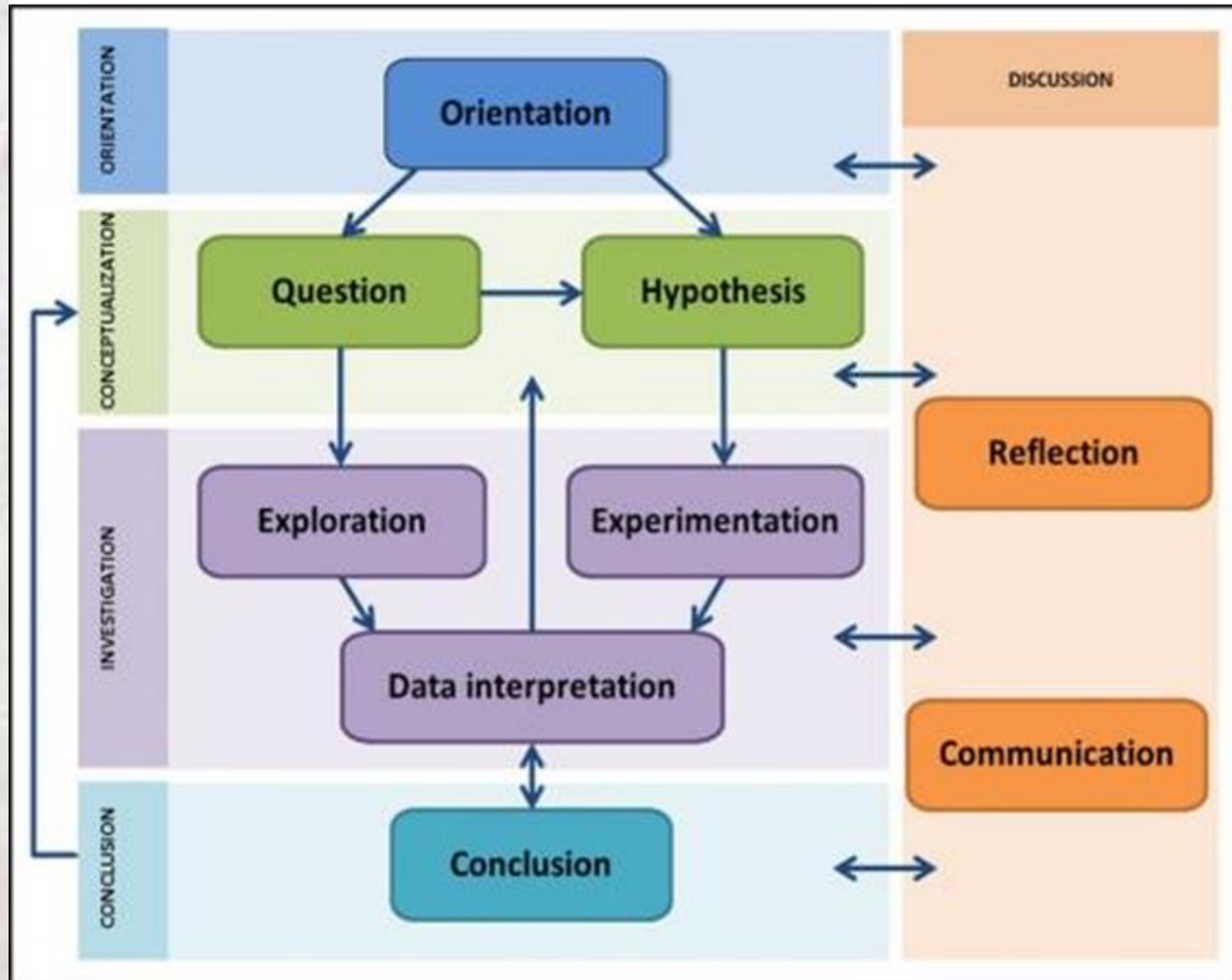


Medicine before and now



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Inquiry Learning Cycle



Cosmology for students



Universe is
Beautiful! ,interesting!



Unfamiliar, difficult to understand ...

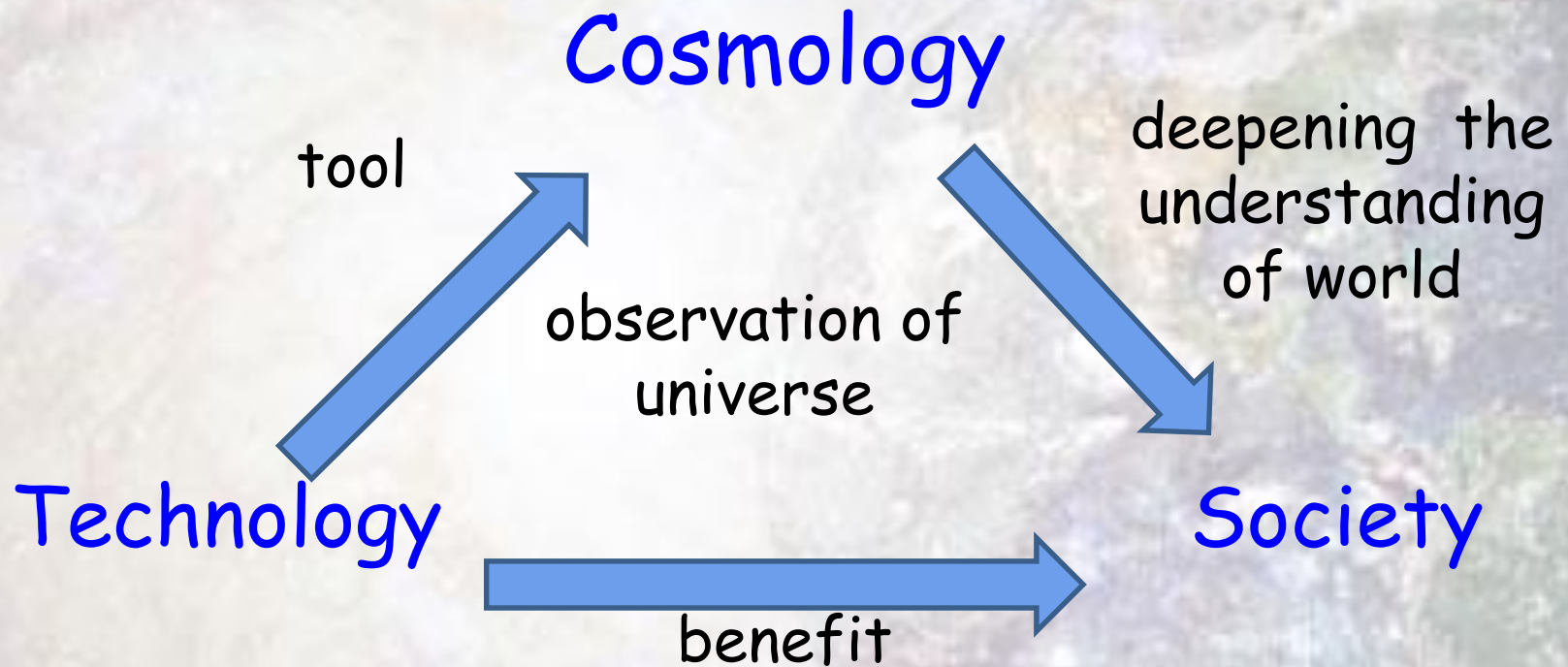


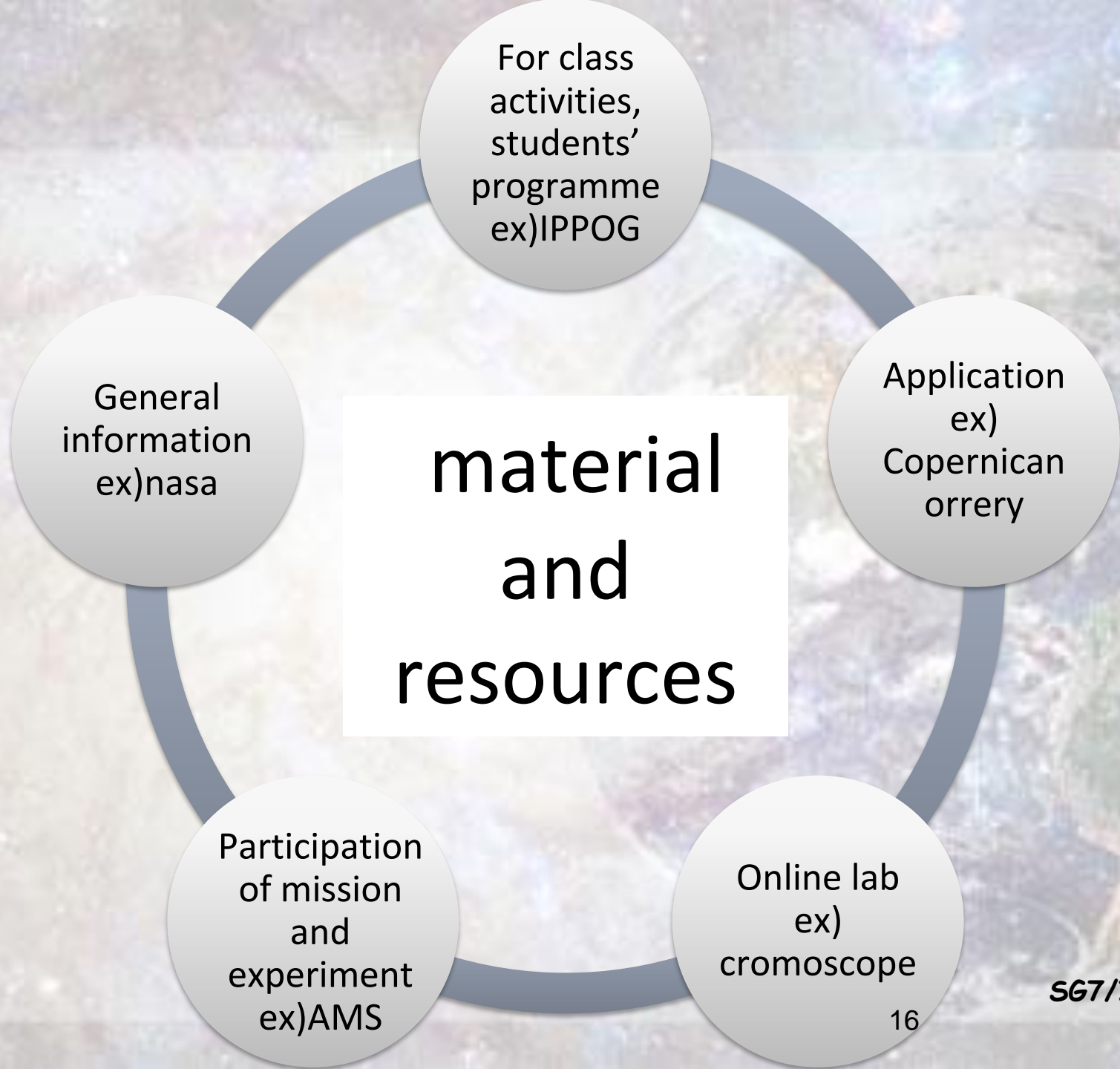
Visible things attract students and
help their understanding.

Difficulties and Challenges

- Very theoretical
- Beyond human scales dimensions
- Don't see the relation between technology and society
- Lack of understanding of concepts from the teachers.
- Not many basic observations of the night and daytime sky
- From Models developed by Copernicus, Kepler, Galileo, and Newton to the present image of a universe formed by billions of galaxies
- Simple numerical estimations of basic concepts, albeit at an informative level of physics forces and movements, gravitation, optics, waves (Doppler effect), electromagnetic spectrum, nuclear physics, relativity, etc.
- Discussions with the teacher: possible solutions and findings instead of just accepting them because of the authority of the teacher or because they are in the textbook, in order to get a better understanding of the concept.

Relation between cosmology and society (school)







<http://www.chromoscope.net>

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Do you want to go to the moon!

