



## Fourth circular of 1<sup>st</sup> GeCAA 2020

Dear members of IOAA, colleagues, friends

This is the fourth circular of the 1<sup>st</sup> GeCAA (Global e-Competition in Astronomy & Astrophysics), the online auxiliary competition which was proposed by the IOAA to provide students to compete in 2020 on an international stage.

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## Important dates

21.09 - reopening of test competition portal  
25.09 - start of individual competition  
27.09 - end of individual competition  
28.09 ZOOM lecture by astronaut Catherine Coleman (starts 13:00 UTC)  
28.09 - start of team competition  
03.10 - ZOOM lecture by Erin Kara (starts 13:00 UTC)  
14.10 - end of team competition  
23.10 - results, end of competition podcast

## Changes for the competition

The academic committee of the 1st GeCAA decided to alter the times for each competition round so that time lengths for each of the rounds would best represent its difficulty and expected time necessary for solving.

**Every participant is asked to register to the gecaa environment him/herself as there could be security issues with login otherwise and we do not want to take any responsibility on that front. In case you have already registered, you can ignore this part.**

Here we present the lengths and maximum points for respective rounds

Round	maximum points	time of round
Theory	150	3:00 h
Data	120	3:30 h
Observation	80	1:30 h

**Team competition materials will be published on gecaa.ee webpage and distributed to students directly after the lecture of Catherine Coleman.**

## Starting times

We have assigned every country a designated starting time, which can be found in the following table:

Countries	UTC 8	UTC 11	UTC 12	UTC 14	UTC 15
Armenia	Start				
Azerbaijan		Start			
Bangladesh	Start				
Brazil					Start

Bulgaria		Start				
Canada					Start	
China		Start				
Columbia					Start	
Croatia		Start				
Cyprus				Start		
Czech Republic	Start					
Estonia				Start		
Georgia		Start				
Germany				Start		
Hungary		Start				
Indonesia			Start			
Iran		Start				
Kazakhstan					Start	
Lithuania			Start			
Malaysia			Start			
Mexico					Start	
Nepal	Start					
Norway				Start		
Peru					Start	
Philippines	Start					
Poland			Start			
Republic of Korea		Start				
Romania	Start					
Russia		Start				
Serbia		Start				
Singapore	Start					
Slovakia			Start			
Slovenija			Start			
Ukraine	Start					
United Kingdom			Start			
United States					Start	
Vietnam	Start					
No of countries		9	10	7	4	7

In case changes are needed please contact [tiitsepp34@gmail.com](mailto:tiitsepp34@gmail.com) no later than 22.09.2020

## Proctoring for the competition rounds

In case all students have gathered in one single location, the respective home countries are responsible for the proctoring of the contestants. Upload link where to upload the video of the contestants will be provided no later than 24.09 directly to respective team leaders. The video link should be of a reasonable quality so that students are distinguishable and identifiable from the video. The LOC will randomly check video feeds from such countries during or after the competitions.

## Solving from home

For the competition the student is expected to:

- Keep video on and angle it in such a way that his/hers face would be recognizable
- Keep sound input on
- Turn off sound output
- Not display solutions page onto camera

Streaming platform specific instructions

- In case student wants to broadcast his solving through youtube or any other passive video upload service, please send the appropriate link to: [gecaa.help@gmail.com](mailto:gecaa.help@gmail.com)
  - Indicate your intention to do so by the latest of 23.09
  - In this case the student is fully responsible for setting up the broadcast
- By default we'll use ZOOM as an alternative and for all other students
  - Respective links as well as access codes will be sent directly to students.
- Team leaders who want to participate as silent observers must write so in advance and notify which countries and which round session(s) they want to observe. In case team leaders interfere with the call, chat, talk etc, they will be expelled from the call.

In case ZOOM is unavailable for you, please contact [gecaa.help@gmail.com](mailto:gecaa.help@gmail.com) and we'll set up a Google meet environment for you. Do this no later than **22.09 (UTC+10)**.

We send to testing slots for ZOOM meetings for every student so that they can test their connection to ZOOM.

## Conduct of the competition

For all rounds the respective Zoom call can be logged in 10 minutes before the start of the competition.

In case all students are in one place, the following conditions must be met or acknowledged:

- For a printed pdf, the official english copy can be used, in case of local translations the copy must be sent to the organizers.
- The answers still must be submitted through the electronic system, although a shifted schedule can be agreed upon if requested (in case work is gathered from students and then scanned). This might cause some additional work on the local side in case students want to appeal their work.
- The observation round cannot be fully solved on paper, thus using a computer or tablet is strongly advised.

## General rules

During the competition, following rules are applied

- We are hosting this unique competition due to the situation created by Covid-19 pandemic. We acknowledge that it is impossible to 100% prevent candidates from looking at additional materials online. However, we expect candidates and mentors to follow honour code and not take unfair advantage of the situation.
  - In case additional human assistance is detected, student work is declared void and the student will be disqualified from the competition.
- Students are not allowed to leave their workplace during the competition, so please make sure in advance that you are not disturbed.
  - Of course, interruptions are allowed in really extreme situations such as, “house is on fire” or similar *force majeure* kind of interruptions.
- Uploaded files must be in pdf, png, jpg or any other common image or immutable document format.
- All attached files must be submitted to the exact problem they are related to.
  - In case of troubles with file uploads, email to [gecaa.help@gmail.com](mailto:gecaa.help@gmail.com) and send your attached files to this email using the following format for naming of files: STUDENTNAME\_COUNTRY\_ROUND\_PROBLEMNR.png (for example: TiitSepp\_EST\_Theory\_1.png)

## Theory round

The duration of the theory round is 3 hours and maximum points that can be obtained is 150 points.

Calculator is recommended during the competition and there are no limitations on which calculator to use.

## Data analysis round

The duration of the data analysis round is 3 hours and 30 minutes and total points that can be obtained is 120 points.

All plots that are required for the competition are considered as roughly proportionate sketches of plots and should be doable using a ruler, protractor and pencil within reasonable time on a blank paper. Graph paper may be used, but no points are awarded or reduced for the use of it. Additionally, in that case special care should be taken while scanning, so that the points are readable on the image of the plot.

## Observation round

Observational round duration is 1 hour and 30 minutes.

Observation round will be automatically checked and manual refereeing is done only in rare cases and only by Estonian local refereeing team.

For reported cases of access issues during the testing phase, we'll offer english and possible translated PDFs and work on alternative solutions and these will be graded manually. All these cases should be pre-agreed.

**In case students are asked to mark an object on the image the students should use the zooming function of the image in case they are unsure of the exact location of the object. The correctness of the students marking will be measured on pixel scale where on every asked object a reasonable error margin is applied. It might be relatively small for easily recognizable objects and can be larger for objects that might not be clearly visible on the image. The smallest inaccuracy margins might be in order of 20 pixels and the largest ranges up to 5% of the dimension of the image.**

## Translations

During the GeCAA following translations are made available:

- Polish
- Spanish (latin american)
- Korean
- Azerbaijani
- Ukrainian
- Bulgarian
- Indonesian
- Croatian
- Russia
- German
- Serbian
- Estonian
- Chinese

In case some countries have been missed in the list, please contact the LOC urgently.

**Respective country team leaders are asked to create their accounts as soon as possible and we'll grant you access to the translation environment. Instructions as well as user inclusion will be done at early hours 22.09 Estonian time.**

## Grading the rounds

Every problem will be assigned at least 2 graders and no grader will mark his/her national students. We will provide instructions for grading environments on tuesday. **There will be a grading tutorial session on friday 25.09 16:00 UTC, which will be recorded and the recording will be made public the day after.**

**Grading for theory round starts at 26.09 and data 27.09.**

**There will be additional grading Q&A sessions on 29.09 at 15:00 UTC to answer all upcoming questions.**

**Detailed grading instructions will be shared by thursday.**

**Grading problems as well as allocated countries will be shared on wednesday 23.09**

## Mock competition

MockTest competition can be accessed using the **link**:  
[competition.gecaa.ee/compete/PnMSZWDCx](http://competition.gecaa.ee/compete/PnMSZWDCx)

**Please use any random name for the country, school and grade field.**

**Only name, and e-mail address are required fields for the test competition.**