



Международная астрономическая олимпиада
The International Astronomy Olympiad

С 1996 г.

Since 1996.

Rules and Regulations for a participant of the Olympiad

There is an obligation of team leaders to translate these rules and regulations, and also the instructions for every Round, to native language of participants in advance and to teach student to follow these rules. (Starting since 2004 this translation has to be done in written form as an obligatory part of application to the International Astronomy Olympiad.)

Originals of the instructions are written both in Russian and English since 2001.

General information for Theoretical and Practical rounds

General information and recommendations:

- The time available is **4 hours** for work at the round.
- **The work must be carried out independently.**
- **Don't write the conditions of problems** in rough copy or clean copy.
- **Languages.** All additional information for participants to be done in both official languages of the Olympiad: in Russian and in English. It is helpful to know basis of one of these languages for correct understanding the additional information.
- **Questions** to supervisors during of rounds. Pay the especially attention to what a question you wish ask. Take into consideration that your question may be repeated for all participants as well as answer. A question of the type “Whether some effect must be taken into account?” means, very often, that you understood the idea of task; or mentioned effect is must essential part of the task.
- **Clean and rough copies.** It is recommended to use the first part of copy-book as clean copy, and the second one – as draft. Clean and draft copies should be marked in Russian or in English by large print characters: «**ЧИСТОВИК – CLEAN COPY**» и «**ЧЕРНОВИК – DRAFT**».
- **Rough copy.** If you haven't time to rewrite solution (or a part of solution) in your clean copy, please make a note “see rough copy” in Russian or English by accurate printed characters («**see rough copy – см. черновик**»). But the index number of the task must be indicated in clean copy, and also a reference to rough copy. **The rough copy will be not checked without such reference.** Considerations that you gave into account of rough copy are evaluated in such degree that they don't contradict to final solution in clean copy. In particular if solutions in clean copy and in rough copy are different, then clean copy is evaluated only.
- Pay attention **to understand the question** of the task. For example, if it is asked to find *radius* of a star then answer “*Diameter of the star is equal...*” is not completely right.
- Pay attention to use symbols as given in the task and (for constants) in the table of constants. For example, if it is written “Find distance **P** in perihelion” do not use **L_P** for this distance. Also do not use the same symbol for different value (do not use **P** also for power in the case above).
- The final answer should be expressed in the most appropriate units (maybe in SI, maybe other).
- Part of the marks available for the solution will be deducted for a correct answer without units (km, kg, au, etc.).
- Part of the marks available for the solution may be deducted for answers with wrong numerical accuracy (wrong number of significant figures).
- The **sheet with the conditions of the problems** you can take with yourself *after* finishing of a round only, but if you made some geometrical sketches on the drawings in the task, then it will be better to return the sheet with task together with your clean copy (in this case you can't write any data about yourself on the sheet with task as well).

Requirements:

- **Personal indication.** Before starting the work it is necessary to indicate the surname, name, patronymic, town, school, class and other individual data of participant at answer sheet. All these data are indicated on cover of the answer sheet only.
- You should write solutions of problems using only **blue or violet pen**. **It is not allowed** to write solutions **by pencil** or other colour pen. Pencil may be used to draw pictures and graphs only. Red pen or pencil are not allowed at all.
- Solution of every new problem you should start **in a new page** (even in the case of only one word in the previous solution). The **index numbers** of tasks **should be distinguished** clearly in rough copy as well as in final version.
- **Numerical values.** All numerical values must be written using standard symbols but not symbols of National alphabet.

What is forbidden:

- To write anything (beginning solution) on the first white page of clean copy (having the stamp of the Council or one of organizers of the Olympiad). This page is intended for the work of a jury.
- To talk with other participants of Olympiad and ask questions.
- To use reference books, textbooks, any other books, tables, catalogue etc., if such items were not given to participant together with task.
- To bring to the round portable computers, mobile phones, navigation devices and other electronic means, touch screen calculators, and also calculators, which ones on exterior resemble mobile phones or communication devices.
- To take calculations as well as write rough solutions and anything at all on own sheets that differ from given by organizers **just for solutions**.
- To remove any page from the answer sheet copy-book.
- To use red colour pen or pencil anywhere in the solution.
- To write anything on the envelopes done with texts.
- To make changes in the work after time for solution is up.
- To ask questions connected with used formulae, constant values, and also questions of type: “Is it necessary to take into consideration certain effect?”
- To make any superfluous noise (for example, from unwrap chocolate etc.)
- To finish the work and leave classroom earlier than 2 hours after beginning of a round expire.
- To come out classroom temporarily more than one participant simultaneously.

What is permitted:

- To write solutions of the problems in clean copy in arbitrary sequence. **However, solution of each problem must have been written in one site from the beginning to the end, and not in pieces, between which there are solutions of other problems.**
- To use sliding rule, computational tables.
- To use calculator provided by organizers. If organizers do not provide participants with calculators, to use own non-programmable engineering button (not touch screen) calculator with arithmetical, algebraical and trigonometrical functions (except calculators, which ones on exterior resemble mobile phones or communication devices).
- To use pen, pencil, ruler, protractor, compasses, graph paper, tracing-paper (if it is necessary).

What is recommended:

- To make all intermediate calculations, transformation symbol aspect, and substitute by number values in end only – it will diminish a probability of an error in final answer, and also increase chances to get points for part of solution in the case of an error in the intermediate transformations.
- To avoid use facts (numerical values, formulae, etc.) known to you, which may be not evident for jury members. Better to receive them from more evident values and formulae.
- To use in solutions only the numerals as sub-indexes: it will be better for jury to understanding the differences in the designations.

— To separate formulae and explanation texts with intervals (about 1 cm).

Additional instructions for Theoretical round (only)

Requirements:

— **Languages of the text of solutions.** It is permitted to write text of solutions in one of three languages: native language or one of two official languages. Nevertheless numerical values must be written using standard symbols but not symbols of National alphabet.

— **Pages for the text of solutions.** In clean copy you should write solutions **only on even (left) pages**. The odd (right) pages will be used by your team leader to translate solutions into English and make emphasizing of your thoughts in solutions.

EVEN PAGE	ODD PAGE
<p><i>Текст решения.</i> <i>Text of solution.</i> <i>Текст решения.</i> <i>Text of solution.</i> <i>Текст решения.</i> <i>Text of solution.</i></p>	
ЧЁТНАЯ СТРАНИЦА	НЕЧЁТНАЯ СТРАНИЦА

Recommendations:

— To diminish text in your solutions, and pay more attention for expressing your solution in drawing pictures, plotting graph, writing formulae and numerical values.

— If you have enough time, please try to **describe** clearly the physical or other **model** that you chose, and all **approximates**, **neglects**, etc. Don't omit description of thoughts that look as obvious. Take into consideration that written solution is evaluated only. Your thoughts that don't reflected in writing will not be evaluated even they are very right.

— When you give **solution of qualitative task**, you must give the ground for your solution. Brief answer such as "yes", "no", "don't changed" are not solution. Please think what quantitative criteria can be used for the ground of your thoughts.

— If you **introduce symbols** for the designation of some quantity, you must explain clearly this quantity. For example: "Let us *E* will be total energy of the celestial body..." This way will make easier a mutual understanding between you and jury member that examines your work.

Take into account:

— Maybe not all problems have correct questions. Some questions (maybe the main question of the problem, maybe one of the subquestions) may make no real sense. In this case you have to write in your answer that the situation is impossible in English or Russian by accurate printed characters: «**impossible situation – ситуация невозможна**». Of course, this answer has to be explained numerically or logically.

— **Data from the tables** (Planetary data, stars, constants, etc.) may be used for solving every problem.

— The answers "yes" or "no" have to be written by accurate printed characters in English or Russian («**Да-Yes**» or «**Нет-No**» respectively).

Additional instructions for both Practical and Observational rounds

Requirements:

— **Languages of the solutions.** No text in any language is permitted to use in solutions. All the solution must be written using only drawing pictures, plotting graph, writing formulae, numerical values and standard international astronomy symbols (like $\♂$, $\♃$, α UMa, M31, 5^m). Numerical values must be written using standard symbols but not symbols of National alphabet. Jury of the Practical and Observational rounds will not take into account any text in any language in solution.

Additional instructions for Observational round

Familiarization with a site of the round

— As usual (except the situations of organizing the round at the remote observatory) the participants to be familiarized in advance with the site of the round during the daytime in the case the round (part of the round) organized during the night.

— In the case the round have a task with a telescope (except for observations with the already adjusted and guided telescope) every participant has to be familiarized with that actual telescope, on which one the participant will work during the round.

Procedures before the round

— At the planned time the team leaders (including **all** the jury members) and **all** the students have to arrive to the round (to the distribution auditorium or other common auditorium).

— For both team leaders and students: it is forbidden to come to the round (to the distribution auditorium) with any electronic device (calculators, mobile phones, computers, GPS-devices, players, photocameras, etc.) in any state of the device (on/off) if such items were not given or specially allowed (in written form) by organizers. Only watches are permitted.

— Organizers announce whether the round will be.

— In the case the round will be the team leaders-translators go to the translation room and cannot leave the room till the end of round (after the translation they continue to work in theoretical jury).

— During the translation and preparing the papers the procedure of defining the sequence of examination starts in the distribution auditorium. Every student takes a jetton with a Latin symbol (that means the examiner) and figure (that means, as usual, the position in the queue to the examiner).

— A student cannot leave the auditorium (except for short hygienic procedures) till he or she goes to the examination.

— Team leaders (not translators) may leave the distribution auditorium at any time (but without permission to return back). After leaving the distribution auditorium the team leader must be in the “finish round auditorium” (if any) or at apartments till the end of the round.

— According to the sequence of examination every student will be called and leaded to the place of the observation by the helper of the examiner.

— In the case the round consist of a few parts (day and night parts, for example) the above-mentioned procedures may be organized separately for every part of the round.

Work of a student on the round (common for all types of rounds)

— **The work must be carried out independently.**

— It is permitted to use your own pen, pencil and ruler (but not other instruments).

— **Languages of tasks.** Two alternatives may be:

1. Every student will be provided with an envelope with the content organized by team leader in advance.

2. Every examiner has a set of tasks written in all the languages on which the tasks have been translated. A participant may use any language to read the task.

— **No any oral answer** will be taken into account.

— **Additional questions** to examiners during the round. It is proposed that there should be no questions during the observational round. All necessary data are written.

— **Rough copy.** Rough copy is not proposed at the Observational round.

— Take into account that the examiner, as usual, is not a jury member, he/she only registers you answers. Jury checks only written documents: your written answers (including drawings, graphs, etc.) and tables of examiners.

— You have to finish every point of observational programme in a limited by the rules time. After the time finishing the examiner has to stop the work of participant.

What is forbidden:

- To indicate the surname, name, patronymic, town, school, class and other individual data of participant at the working sheet of paper. Only code should be written. The work must be anonymous. In the case of infringement a participant can be disqualified.
- To talk (any way, including, for example, sign language) with other participants of Olympiad, and ask them.
- To talk with examiner, ask him/her a question connected with the matter of the round.
- To use reference books, textbooks, any other books, tables, catalogue etc., and also to use any electronic devices (except watch) if such items were not given to participant for the round by organizers.
- To make changes in the work after time for the task is up.

Outdoor work of a student**— Signals during the round.**

One long whistle – the beginning of work.

One short whistle – ~40% of working time is remaining
(the exact value in minutes will be known before the round).

Two short whistle – ~2 minutes of the work is remaining.
(the exact value will be known before the round).

Three short whistle – the end of the work.

— As usual, there may be in general two types of tasks:

1. To answer for some question in written form. In this case you have to work (write down answers, draw pictures, etc.) in the sheets of paper that given by the examiner.
2. To show something in the sky, adjust the telescope, etc. In this case you have to show the result for the examiner (the necessary object, direction, adjusted telescope, etc.) without any oral comments. Examiner put the necessary features of your showing to his/her table. **No any oral answer** will be taken into account as well.

Work with artificial sky, demonstrations, in a planetarium, etc.

- Special explanations to be done by the organizers in this case.

Procedures after the work.

- Student has not to keep with him/her any sheet of paper after finishing the work on the observational round.
- After finishing the work on the observational round the participant has to go to the “finish round auditorium” (if any) or to his/her apartments and stay there till the end of the round.

We wish you success !



Organizing committee, jury.

IAO 2001 Crimea, IAO 2002 SAO, IAO 2003 Stockholm, IAO 2004 Crimea, IAO 2005 Beijing, APAO 2005 Irkutsk, IAO 2006 Mumbai, APAO 2006 Vladivostok, IAO 2007 Crimea, APAO 2007 Xiamen, IAO 2008 Trieste, APAO 2008 Bishkek, APAO 2009 Damyang, IAO 2009 Hangzhou, IAO 2010 Crimea, APAO 2010 Papua, IAO 2011 Alma-Ata, APAO 2011 Aktobe, IAO 2012 Gwangju, APAO 2012 Cox's Bazar, IAO 2013 Vilnius, APAO 2013 Tomohon, IAO 2014 Bishkek, APAO 2014 Irkutsk, IAO 2015 Kazan, APAO 2015 Dhaka, IAO 2016 Pamporovo, APAO 2016 Goheung, IAO 2017 Weihai, APAO 2017 Novosibirsk, IAO 2018 Colombo, APAO 2018 Lijiang, IAO 2019 Piatra Neamt, APAO 2019 Tehran.