

AC 2020 Content Brief

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Biggest Format Change: AC 2020 will be ONLINE

Please see Admin Brief for details

Key Format Changes for Senior Category

AC2020 Format Changes

Before the pandemic struck, AC 2020 was originally intended to feature two key format changes:

- The replacement of 1 Senior Team Round Question with a Data Analysis Question
- Modifying the Senior Obs Round to include a Night Sky Tour component

We will briefly sum up the rationale for these changes in turn

Data Analysis Question (DAQ)

- Issue 1 : Team Round Questions are quite unrepresentative of how actual astronomy works
 - Mostly math/physics, with scarcely any emphasis on understanding data
- Issue 2 : Near-impossible to incorporate data analysis/processing into a 2 hour closed-book physical competition format.
- The introduction of the DAQ hopes to resolve these issues
 - Side benefit : reduces the stress/time pressure faced by Senior teams during the Team Round

Data Analysis Question (DAQ)

- Note that the DAQ is already up online
- The questions are meant to guide you – read them carefully!
- A data analysis guide will be uploaded in a separate document – make sure to view it too!
- You can complete this using only Excel (or other spreadsheets)

Key Changes to the Observation Round

1. Introduction of a Night Sky Tour Component
 2. Replacing Constellation Identification with an Open Ended Question
- These changes are in keeping with our stated goals in [AC2019](#)
 - We wish to discourage excessive memorization of obscure night sky objects
 - NB: You still need to know key constellations/objects – otherwise you will suffer in the Night Sky Tour! The goal here is moderation in all things.
 - Please see the Observation Round materials that are uploaded separately.

Important Tips!!!

Advice from the QMs

1. Starting off

- Read up on the Syllabus and the format of the competition as included in the Information Letter
 - Links to these documents are provided later on in this slideshow
 - If you have questions, do ask!
- For everyone : A good place to start is to understand the formulae used in the Formula Book
 - The Formula Book is there for a reason! It contains oft-used formulae used in the competition.
 - Ignore the Formula Book at your own peril!

2. Know what to expect

More generally, calibrate your expectations beforehand

- AstroChallenge is intended to expand your horizons.
 - i.e it will be hard
- We do not ask for perfection from you
 - This is why we allow you to leave up to 7 blanks for the Individual Round, and the full score for the Team Round is 80% of the total possible score
- It is ok to be stumped – the important thing here is to **TRY**
 - Feel free to talk to us if you don't understand the question!

3. KNOW YOUR ENEMY

- Read up on astronomy concepts beforehand!
 - You should definitely aim to know your basics before coming in
- Do attempt past AstroChallenge questions
 - Get an idea of how the standard is like (but don't do it like a TYS, it won't help)
 - Also tests your current level of understanding
- **Understand the solution method/concepts**
 - Method marks are awarded + error carried forward is allowed!

4. Individual Round

- As stated earlier, you can leave up to 7 blanks without penalty
 - Use blanks for questions you have least confidence in
- The first few questions are intended to test astronomy basics
 - Try not to waste blanks on them!
- Some questions can be solved by eliminating “nonsense” answers
 - If you can eliminate two options or more, picking a random option is effectively equal to leaving the question blank
 - Use this to conserve blanks!

5. Team Round

- Clear workings are MUCH appreciated
 - Help the marker give you marks!
- The most common errors are ...
 - Wrong units, careless mistakes and misuse of formulae
- Best way to avoid the above: read your workings & translate the math
 - Does it make sense when you say it out in plain English?
 - Corollary – “outline” the method in plain English before doing the math

6. The Art of Trying

WE CANNOT AWARD MARKS TO BLANK SUBMISSIONS

- Having said that, trying doesn't mean you write anything under the sun!
- Try to write things that
 - Are coherent and aren't internally contradictory
 - As far as possible, rely on astronomy concepts (need not be formulae)
 - If all else fails, sketching a diagram can help!

Resources

Key Resources – AC2020 specific

- [AC 2020 Invitation Letter + Syllabus](#)
- [AC 2020 Updated Information Letter](#)
- [Project Round Infosheet](#)
- [AC 2020 DAQ \(For Seniors only\)](#)

Key Content Resources

- [Current Formula Book](#)
- [Current Mathematical Formula Book](#)
- [Math and Physics Expectations for AC 2020](#)
- [Past AC Papers, Solutions and More!](#)

Resources to Learn

- Astronomy Learning Materials
 - https://d3bxy9euw4e147.cloudfront.net/oscms-prodcms/media/documents/Astronomy-OP_zltt6LJ.pdf
 - Turn Left at Orion
 - Astronomy Today
 - <http://amazingspace.org/>
- Youtube Channels
 - Teach Astronomy
 - Crash Course Astronomy
 - Professor Dave Explains
 - Deep Sky Videos
 - SciShow Space