

Group Project 1: Misconceptions in astronomy

You have been lied to. Oh, not maliciously, usually, but due to carelessness or ignorance or merely passing along a tradition, someone in your past has told you something about astronomy which is not true. In this group project, I have listed a set of astronomical "facts" that are incorrect. You may have heard some of these; they are the falsehoods most likely to be known to students in the United States.

Your group's job is to determine what the falsehood is (in other words, correct the statement) and present your findings to the class in an oral presentation, accompanied by at least **one visual aid** (poster, drawing, website, Powerpoint slide, overhead transparency, etc.).

Day 1 (Tuesday): Break up into **groups of three**. Introduce yourselves and figure out some way of communicating with each other outside of class so that all of the group knows who is doing what over the next week. Elect a secretary/recorder, who will **list all the group members' names** on a sheet of paper. Look over the list of statements below and **choose three statements** that would be interesting to the group to investigate. Write your choices down on the sheet with the names and **turn it in to me**. To avoid overlap, I will choose one statement from your list such that all groups end up investigating different statements. Over the next couple days, research how that **one statement is wrong** and how it can be fixed.

Day 2 (Tuesday): Meet with your group and determine who will be doing the presentation and what **visual aid(s)** will be used. Over the next day, make the visual aid and write down or type up a set of notes for the presentation. Make sure the sources of your information are given credit (i.e., construct a bibliography). The written portion will be turned in, so make sure it is reasonably organized and neat (especially if it is *handwritten*).

Day 3 (Thursday): Give a **three-minute presentation** to the class on your statement. This may be done with all members of the group talking, or just one member presenting. Make sure to introduce all of the members of the group, however. There will be a short question-and-answer session after each presentation.

- Turn in the **written summary**, along with a **bibliography**. Make sure the names of all group members *who contributed to the presentation* are on the summary. Use a standard citation format. That is, the bibliography should contain the author, title, publisher and publication date of the textbook(s) you used and/or the author or sponsoring organization, the URL (i.e., <http://...>) and the last update date of the website(s) you used.

TOP FOURTEEN ASTRONOMY MISCONCEPTIONS

Misconception #1: **Astronomers** spend all of their time looking through telescopes and recording their results.

Misconception #2: Interstellar space is a perfect **vacuum** (no particles whatsoever).

Misconception #3: Our **Milky Way Galaxy** is the largest, possibly only, galaxy in the universe.

Misconception #4: A **black hole** will suck you in because of its incredible gravity. For instance, if the Sun suddenly became a black hole, the Earth would be sucked in.

Misconception #5: The higher the **magnification**, the better the telescope. In other words, you should pay top dollar to get the most magnification out of your telescope.

Misconception #6: In **astrology**, if your Sun sign is Leo, that means the Sun was in the constellation of Leo on the day you were born.

Misconception #7: **Stars** must be round because that is how they look when viewed through a telescope.

Misconception #8: **Meteors** can only be seen at certain times during the year.

Misconception #9: There is no need for more telescopes on the ground since **space-based telescopes** have made ground-based telescopes obsolete.

Misconception #10: You should never pick up a freshly-fallen **meteorite** because it will be too incredibly hot to touch.

Misconception #11: Astronomers have located the **center of the universe**.

Misconception #12: Of all the objects in the solar system, only Earth's Moon exhibits **phases**.

Misconception #13: Because of new discoveries about **Pluto**, it is no longer considered to be a planet.

Misconception #14: The Large Hadron Collider (LHC), which was switched on this month in Switzerland, will result in the Earth collapsing into a **black hole**.