

Academic Communication in Astrophysics

Homework 3 — due 07/05/2025

Please note: these problems do not necessarily have only one acceptable solution. Use the principles discussed in class to edit for better communication as instructed.

1) Precise words

Find the nonspecific terms in the following sentences. What are the nonspecific words? Replace the nonspecific choices with more precise terms or phrases. Note that it is generally not necessary to change the sentence structure; just replace the individual words. Guess or invent something if you have to.

1. All infrared-selected galaxies showed enhanced star formation rates.
2. Plants were kept in the cold overnight.
3. Some exoplanets orbit multiple stars.
4. Apart from the discussed main band, weaker emissions were observed.
5. (Last sentence in the Introduction) The present paper reports on continuing observations that were performed to clarify this surprising effect.
6. The dust emission was greatly affected when the star formation rate increased.
7. To provide proof of concept for our hypothesis, we studied a virus in its host cells.
8. Only some of the region under study exhibits larger reddening.
9. The PAH molecules with the most intense peak at 7.7 microns can be identified with the MIRI instrument on JWST.
10. The afterglow of the blast wave was markedly brighter than we expected.

2) Simple words I

Improve the word choice in the following examples by replacing the underlined terms or phrases with simpler word choices. Again, do not change the sentence structure; just change the words.

1. These data substantiate our hypothesis.
2. We utilized UV light to induce *Arabidopsis* for mutations.
3. The differences in our results compared to those of Retter et al. (2015) can be accounted for by the fact that different algorithms were used.
4. For the purpose of examining cell migration, we dissected mouse brains.

5. Our results are in accordance with Seuter et al. (1988) who measured iP in the culture medium of *Physcomitrella* transformed with the agrobacterial isopentenyl transferase gene.
6. We performed a systematic study of the vibrational spectrum of CO₂ using various isotopomers.
7. An example of this is the fact that quantum materials differ substantially.
8. In Swaziland, the number of HIV-infected children increased by an order of magnitude in the past decade.

3) Simple words II

How many syllables are in each of the underlined words below? Can you predict whether they have Latin, French, or Old English roots? Look up the origins of each of the words, and then rewrite the sentences using as many Old English words as you can without changing the meaning. List the number of syllables and the origins of the shorter words.

1. For example, expansion of the extent of the winter range by continued pioneering of segments of the northern Yellowstone elk herd northward from the park boundary and extensive use of these more northerly areas by greater numbers of elk have been coincident with acquisition and conversion of rangelands from livestock production to elk winter range.
2. We conclude that snag retention at multiple spatial and temporal scales in recent burns, which will be salvage-logged, is a prescription that must be implemented to meet the principles of sustainable forest management and maintenance of biodiversity in the boreal forest.