Astr 150 Assignment 5: maximum elongation
due Thurs Feb 19, 2009

1. Draw a scaled model of the orbits of the inner four planets Mercury (0.39 AU), Venus (0.72 AU), Earth (1.00 AU), and Mars (1.52 AU). Assume that the orbits are exact circles. I would make Mars’s orbit about 8 cm in diameter, i.e., large enough that the smallest orbit, Mercury’s, is easily visible.

2. Label the maximum elongation angles from Mars to each of the three inner planets.

3. Use a protractor and measure the angles.

4. Extra credit question! Use trigonometry to calculate what the maximum elongation angles should be. Hint: the Mars-Sun line forms the hypotenuse of a right-angled triangle.

Requirements for a good assignment

- The assignment will be graded strictly, as expected for a university-level course. The assignment is graded out of 30 points.
- Have your name, SID, and a word count at the top of the paper. Use question-and-answer format when writing your assignment, do NOT hand in a run-on paragraph (50% penalty).
- Be typed, double-spaced, of maximum length 250 words. Assignments longer than 250 words will receive zero credit. Try to be environmentally conscious and print on both sides of the paper.
- Use quotations only to illustrate your point, not to make it. If you are unclear about this requirement, then speak with the instructor.
- Show completeness of information, conciseness of expression, have a logical development of ideas, and evidence of thought regarding the content.
- Be professional of presentation, e.g., no ragged ends, creases, or ink blobs on the paper.
- If you reference any written sources at all, then you must give a bibliographic entry.
- In all ways, the author should show pride in his/her work.