

Mars Evolution EPS 465/565 Take-home Final Exam Spring 2009

Answer the four questions for 25 pts full credit each, total exam: 100 pts. This exam is worth 25% of your final grade.

Please turn in by **email** either a MS Word file or a PDF to agee@unm.edu. Limit your answers to 2-pages of text per question. You may include supplementary pages with figures if needed.

Exams are due at midnight on Tuesday, May 12th.

N.B.: The sooner you turn in your exam, the sooner I can assign the final grades!

1. Describe the Viking exobiology experiments, and discuss how the search for life could be improved in future Mars missions.
2. Describe all the lines of evidence supporting the hypothesis that SNC meteorites are from Mars. Why do the martian meteorite compositions appear to be rare or lacking in obiter and lander measurement of Mars surface rocks?
3. What is the evidence for the existence of an early magnetic field on Mars? Explain why we think the martian core may still be completely molten. How can a modern molten core be reconciled with the core dynamo dying out a long time ago?
4. The martian surface may have been “warm and wet” in its early history. What lines of evidence support this view and what lines of evidence refute it? Based on all the evidence, what is your opinion and why?