

GG 710 Magma Chambers and Conduits

Course Description and Syllabus

What is a magma chamber? What are the tectonic, crustal, and fluid-mechanical controls on the spatial dimensions, depths, and longevities of magmatic systems? What is the nature of the melt/magma conduit system that (1) feeds growing magma accumulations, and (2) drains magma reservoirs during volcanic eruptions? This seminar course will investigate these questions from diverse perspectives using specific case studies to guide discussion. Vantage points we may take include geophysical studies, volcanological observations, evidence from crystallized intrusions (e.g., ophiolites, granites, layered intrusions), and fluid dynamical modeling. Specific topics and papers discussed will be determined by student interest, and will include current controversies as well as paradigm models.

Course Information

Credits: 2

Semester: Spring 2004

Meeting Times: Tu 3:00-4:50 POST 702

Instructor: Julia Hammer

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Course Objectives

- compare parameters of interest between different tectonic settings and using different methods to arrive at a holistic understanding of "magmatism"
- formulate and pursue questions
- get some concept of the range of techniques available, who the top researchers are, the paradigm models, and current controversies
- assess the limits of resolution (in space and time) of geophysical and geochemical approaches applied to study of magmatism
- critically evaluate the common assertions we use in introductory and upper division courses
- learn to scan a paper that is outside your specialty, articulate the concepts that are unclear to you, get the "gist" of the approach, and assess the paper's strengths and weaknesses

Expectations

- read the assigned paper(s); usually 15-30 pages total, come prepared to discuss them, and participate in the discussion
- write a 5-7 page paper on a topic of your choosing

Grading

participation

(60%)

paper

(40%)