

EPSC350 - Winter 2014 - Test 1

INSTRUCTIONS:

Select one extensional feature from each list. You have one week to write a fully cited paper comparing and contrasting the two features. Prioritize authority, timeliness, and relevance of the sources you choose to cite. Your report should address some of the topics listed below, but they need not be weighed equally. Emphasize the particular topics which are most important (in your judgement) to the features you have selected. Do not feel limited to the suggested topics if you come across more interesting information. Your paper should summarize available data and also explain the differences between the two features.

You can use any and all resources at your disposal - books, journals, internet, people, each other - anything goes. The paper should be less than 2500 words, INCLUDING reference list. Include as many figures as you like.

You may bring your paper with you to help in the in-class test next week. The class test will focus on general topics covered in lecture and assigned readings. At the end of the test, turn in both parts. Writing your paper should help you prepare for the class test.

Topics:

- Tectonic setting
- Conditions at initiation of rifting
- Evolution of rift from initiation to cessation or current activity
- Temperature and heat flow
- Lithospheric structure
- Seismicity
- Effects of fluid flow
- Mantle structure, temperature and flow
- Magmatic activity and geochemistry
- Plate motion rates
- Changes in the tectonic configuration of the features through time

Extensional features (pick one from each list):

- | | |
|------------------------------------|-----------------------|
| 1. Basin & Range province | A. Lau Basin |
| 2. Oman Ophiolite | B. Gulf of Aden |
| 3. Connecticut Valley Aulocogen | C. Corinth Rift |
| 4. Baikal Rift | D. Juan de Fuca Ridge |
| 5. Salton Sea - Gulf of California | E. Gakkel Ridge |

Marking criteria:

- 25% Balance between breadth and depth of geodynamic topics
- 25% Clear understanding of relationships between geodynamic topics and cause-effects
- 25% Scientific writing/presentation
- 25% Choice and use of reference materials, level of rigor