Preliminary Information and Timetable

2012 Summary  The objectives of this unit will be addressed through a series of exercises to be completed using Proterozoic rocks of the Amadeus Basin and Arunta Block in central Australia. Trekset Tours have been contracted to supply transport, camping equipment and all food for two 12 day tours. Both tours will follow the same itinerary and involve the same tasks. All accommodation will involve camping. Group A will depart Sydney on Saturday 30th June, and Group B will depart on Wednesday 11th July. Return group air travel has already been booked for both groups; early arrangement of this was essential because of the size of the groups and it will not be possible for individuals to customise their bookings. It is anticipated that each tour will involve equal proportions of students from the two Universities, and most tasks will be completed in groups with representation from both Universities.

Cost  Each student will need to pay $1250.00 to their respective University to cover living and accommodation expenses on the excursion; there need be no additional cost to individual students. This fee will need to be paid before April 20 to match advance purchase arrangements for air travel, and to finalise numbers and logistic detail. The cost will then rise to $1350 for payment before April 27, and $1450 for payment before May 14. Travel costing and availability after May 14 will be assessed on a case-by-case basis.

We are mindful that the cost is a burden to some students. However, the attendance of each student on this excursion presents a substantial cost to each School beyond individual contributions. Students that perceive they may have problems meeting this commitment can confidentially communicate with Geoff (Sydney) or Nathan (Macquarie) to resolve the issue.

Assessment  Students should be aware of the assumed knowledge (below) and that the educational objectives of the excursion involve concentrated learning. Most prior excursions have involved substantial evening work by all students.

• You will need to attend two compulsory one day workshops on June 27 and June 28 and complete all tasks (worth 5%).
• Upon your arrival in central Australia, you will need to be involved in risk assessment and be assessed on background reading of five or six key papers via a theory test of approximately one-hour duration (collectively worth 10%). Details of these will be distributed late in semester one.
• You will complete two multi-day mapping exercises on the trip: one atOrmiston Gorge in the western MacDonnell Ranges (150 km west of Alice Springs; worth 25%) and a second at Mt Boothby in the south-eastern Reynolds Range (150 km north of Alice Springs; worth 35%). Your work will be assessed from the perspectives of accuracy and the sophistication of geological interpretation, based on 2D surface mapping and 3D projections via, for example, cross section and block diagram presentation.
• There will be a theory and practical test at the end of the excursion that will draw upon tasks completed during the excursion (worth 15%).
• You will need to compile appropriate data and illustrations to justify your interpretations in a notebook (worth 10%).
• Note: a satisfactory result is required in all assessment components.

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and others to be advised
Assumed knowledge

This unit relies heavily on the field techniques of mapping, stratigraphic correlation, and structural synthesis taught in the relevant prerequisite units. Basic principles such as form line mapping are still the backbone of most mapping, even in the highest-grade metamorphic rocks. This unit assumes that students are proficient at:

- navigating in the field using aerial photographs and GPS;
- the identification of common rock types, including distinguishing between common igneous, sedimentary and metamorphic rocks;
- aerial photograph interpretation using mirror stereoscopes;
- the use of geological compass/clinometers for obtaining field structural data (both planes and lines);
- methods of plotting structural data on maps and in stereographic projections;
- the stereographic analysis of folds;
- the preparation of basic field maps and, from them, interpretable well-constrained cross-sections and block diagrams.

Key Learning Objectives

The six main objectives in this unit are to:

- Learn basic mapping techniques (form surface mapping and structural mapping) in poly-deformed terrains straddling part of a major unconformity between a metamorphic basement, and a covering meta-sedimentary sequence
- Be able to recognise a range of lithologies, structures, and microstructures, in a range of metamorphic conditions
- Understand the styles and geometry of deformation phases, and to determine the sequence of deformation events that have affected the area
- Understand the nature of a variety of unconformities, and to correlate structures across them
- Develop a geological and tectonic history of a multiply deformed and metamorphosed area
- Most importantly, to recognize and solve geological problems in the field

Anticipated Itinerary

<table>
<thead>
<tr>
<th>Group A</th>
<th>Group B</th>
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<tbody>
<tr>
<td>June 27</td>
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<tr>
<td>pre-departure workshop</td>
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<td>June 28</td>
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<tr>
<td>pre-departure workshop</td>
<td>pre-departure workshop</td>
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<td>June 30</td>
<td>July 11</td>
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<tr>
<td>08:30 Group to assemble at Qantas Group Check in for the flight to Alice Springs. QF790 Departs Sydney 09:55 arrives 12:50 Travel to Glen Helen Resort in the western MacDonnell National Park. Lunch is at own expense on this day, and you will need to complete an exercise that will draw on the assigned reading.</td>
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<tr>
<td>July 1–3</td>
<td>July 12–14</td>
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<tr>
<td>Map in Ormiston George.</td>
<td>Map in Ormiston George.</td>
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<td>July 4</td>
<td>July 15</td>
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<tr>
<td>Amadeus Basin transect; continue to Aile- ron Hotel and Roadhouse</td>
<td>Amadeus Basin transect; continue to Ale- ron Hotel and Roadhouse</td>
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<td>July 5–10</td>
<td>July 16–21</td>
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<tr>
<td>Complete exercises and mapping at Mt Boothby in SE Reynolds Ranges.</td>
<td>Complete exercises and mapping at Mt Boothby in SE Reynolds Ranges.</td>
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<tr>
<td>July 11</td>
<td>July 22</td>
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<tr>
<td>Pack-up and travel to Alice Springs airport. Return to Sydney QF791 Departs 13:30 arrives Sydney 16:45</td>
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Equipment

Trekset will supply three-man pyramid-style tents, with two persons allocated to each tent. They will also supply sleeping mats for the entire group, so there is no need to bring a lilo. You will need to bring all your geology gear plus sufficient robust clothing (for hot days and cold nights) for 12 days, together the usual camping gear: sleeping bag, pillow, sleeping sheet, eating utensils and a tea towel, toilet requisites, sunglasses hats and a torch. A more comprehensive list will be provided later.

Special Dietary Requirements

You must inform Nathan or Geoff of any special dietary requirements well before the excursion so that appropriate arrangements can be made. Once the trip starts, there will be very limited capacity to modify the planned meals.

Health Issues

It is also your responsibility to take all personal medication required for the duration of the excursion and inform trip leaders of any issues that might arise during the trip. As we will be in remote locations that are unlikely to have mobile phone reception, advance warning of any potentially serious issues is common sense and necessary.