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### Vertical Aerial Photography

Figure 1. Higginsville regolith base map (Lintern, et al., 1996), compiled by Mike Craig on RC9 aerial photographs.

### Landsat Thematic Mapper

Figure 1. Spectra of selected surface materials and wavelength positions of LANDSAT TM band passes.

Figure 2. Three-band Landsat TM image of second principal component of ratios 4/3 and 5/7 in red, ratio 5/4 in green and the addition of bands 7 + 1 in blue, overlain with regolith and landform vectors.

Figure 3. Regolith and landforms from part of the Jumbuck map, Half Moon Lake region, Gawler Craton, South Australia (Wilford, et al., 1998).

### Hyperspectral Remote Sensing

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Figure 3. An example for regolith-landform mapping.

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### Radar Imaging

Figure 1. Images of Landsat TM and AIRSAR polarimetric data compare surface and sub-surface textural information from radar with surface mineralogy and vegetation from TM.

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### **Airborne and Ground Magnetics**

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### **Ground and Airborne Electromagnetic Methods**

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### **Ground Penetrating Radar**

Figure 1. a) and b) An application of using the GPR technique to map the groundwater surface and the sand / gravel-bedrock interface (Scaife and Annan, 1991).

Figure 2. This section illustrates the use of GPR for the location of underground services and in this case a pipe buried at approximately 2 metres (Courtesy of Mala Geoscience).

Figure 3. Radar section across an area that has two plumes of contaminated groundwater present. Note the lack of GPR signal penetration due to the contamination having a much higher conductivity than the surrounding ground (Davis and Annan, 1989).

Figure 4. This illustrates the versatility of the GPR system to locate various different items made of different material at various depths (Courtesy of Mala Geoscience).

Figure 5. An example of a borehole radar section obtained with a Mala Geoscience borehole probe.

### **Ground Acoustic Penetration**

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## **Gravity**

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## **Geophysical well logging**

Figure 1. The original geophysical logging equipment used by the Schlumberger brothers in the late 1920's.

Figure 2. Part of the first geophysical log obtained by the Schlumberger brothers in 1927.

Figure 3. Regolith logging with a small, easy-to-use geophysical logging system, mounted in a 4WD vehicle.

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Figure 5. Schematic diagram of logging setup for resistivity and SP logging.

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