



## Mercury Geology

### Observing Features on Mercury

#### Answers:

1	<b>Identify an area that appears to consist of young rocks.</b> Any smooth, fairly un-cratered surface will do (1)
2	<b>Identify an area that appears to consist of older rocks.</b> Any rough, heavily cratered surface (1)
3	<b>Examine the shadows inside the craters on the left side of the image. Which way is the sun shining in this image?</b> West to East (1)
4	<b>Why do you think this is, bearing in mind how the crater shadows looked in question 3?</b> The image is a composite/mosaic (1) of images taken on different orbital passes/different times (1) ( <i>Accept other sensible answers.</i> )
5	<b>Examine the two craters A and B. Which is the older of the two?</b> B (1)
6	<b>How did you conclude which crater was oldest?</b> Crater A overlies/cuts across/has partially destroyed crater B (1)
7	<b>Feature D is one of the many arcuate reverse faults seen on Mercury, running along the west side of Rembrandt. Examine crater E. Is the crater older or younger than the fault?</b> Younger ( <i>covers up the fault</i> ) (1)
8	<b>Look at the craters near to C. These are younger craters. Give two reasons for reaching this conclusion.</b> These craters have sharp, well defined rims; they look 'fresh' (1) These craters are impacted into a smooth (lava) plain and so post-date it (1) ( <i>The lava itself covers up older craters.</i> )
9	<b>Looking at all the craters and their likely relative ages, what do you notice about them as they get younger?</b> The younger craters are generally smaller (1) <b>For a bonus 2 marks, can you explain why this may be?</b> The reason is probably that the supply of larger impacting objects runs out sooner than the larger number of smaller impactors (2) ( <i>Accept other plausible explanations, e.g. a later, separate bombardment episode or suchlike.</i> )
10	<b>Feature F is the edge of something. What do you think it is and what direction was it moving?</b> Feature F is the edge of a lava flow (1) Which appears to have spread from the centre of the largest crater, Rembrandt, so was thus moving south west in this image (1)