

INTERPLANETARY COMPARISON AND MODELS FOR IMPACT EJECTA DEPOSITION AROUND IMPACT CRATERS.

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THE STYLE OF THESE DEPOSITS DEPENDS ON THE PLANETARY ENVIRONMENT CONDITIONS AND THE SCALE OF IMPACT. DIFFERENT PLANETS OF THE SOLAR SYSTEM DEMONSTRATE INSTRUCTIVE EXAMPLES OF THE EJECTA DEPOSITION. THE MOON AND MERCURY GIVE THE BASIC EXAMPLE OF MOST OF CRATER-FORMING PROCESSES AT THE ATMOSPHERE-LESS BODY. WITHIN ~ 2 CRATER RADII A CONTINUOUS EJECTA BLANKET IS OBSERVED. BEYOND THE CONTINUOUS RANGE, SECONDARY CRATERS ARE MOSTLY COMMON. AN IMPORTANT CONCEPT OF A BALLISTIC EROSION PREDICTS THE PRESENCE OF A LARGE AMOUNT OF LOCAL MATERIAL IN THE EJECTA BLANKET DUE TO MIXING DURING THE BALLISTIC DEPOSITION OF EJECTA. VENUS DEMONSTRATES THE EXAGGERATED INFLUENCE OF THE DENSE ATMOSPHERE. DESPITE THE PREDICTION THAT THE DENSE VENUSIAN ATMOSPHERE LOCKS ALL EJECTA INSIDE THE CRATER RIM, RADAR IMAGES REVEALED BROAD EJECTA BLANKETS AROUND IMPACT CRATERS. MARS SEEMS TO SHOW THE WATER (AND OTHER VOLATILES) IMPORTANCE. THE WELL KNOWN RAMPART CRATERS FORMATION MECHANISM IS STILL AN ENIGMA. HOWEVER THE MOST PLAUSIBLE HYPOTHESIS IS THE HORIZONTAL TRANSPORT OF EJECTA AFTER THE BALLISTIC DEPOSITION FOR SEVERAL TIMES LARGER DISTANCE THAN FOR A DRY TARGET ROCKS. WE PRESENT THE BASIC DATA ON EJECTA DEPOSITS ON EARTH, MARS, VENUS, AND THE MOON. THE MODELS OF DIFFERENT TYPES OF DEPOSITION ARE EXAMINED.