

EFFECTS OF THE ORIENTALE IMPACT ON THE PRE-EXISTING CRATER POPULATION, A. Woronow and R. G. Strom, Lunar & Planetary Lab., U. of Arizona, Tucson, AZ 85721

Orientele, the freshest basin on the Moon, is well suited for the analysis of effects of a basin-forming event on a crater population. Our study uses the new LPL lunar-crater catalog to analyze the entire hemisphere centered on Orientele. Crater diameters down to 8 km have been used over most of this hemisphere, but some regions are measured down to only 20 km, and some small areas are unmeasured. We have eliminated regions of mare flooding from our study.

The Orientele-centered hemisphere has been grided radially and concentrically into 1440 equal-area segments. Intercomparisons of annuli at varying distances and sectors at varying azimuths have begun and the following preliminary findings can be reported:

- (1) The abundance of secondaries relative to primaries peaks in the diameter range 12-20 km. In the range 8-12 km the abundance of secondaries is marginally recognized, but above 20 km diameter they do not contribute significantly to the total crater population.
- (2) Secondary craters occur predominantly at a range of 960-1500 km from the basin's center and do not contribute significantly to the total crater population beyond 1500 km range.
- (3) Secondary craters are predominantly Class 1 and 2 (sharp rimmed) craters, but some class 3's are also secondaries.
- (4) The continuous ejecta blanket out to about 300 km from the basin rim (Cordillera Mts.) has either obliterated pre-existing craters or degraded them to Classes 4 or 5.

<u>Dia. Range</u>	<u>% Obliteration</u>
8-12 km	80
12-20	70
20-50	60
>50	40

- (5) An excess of secondaries to the northwest and a corresponding dearth to the southeast suggests an oblique impact coming from the southwest.

The above conclusions are preliminary and based on a broad-based survey of the entire circum-oriented hemisphere. In particular directions considerable local variations may be encountered. As our analyses continue, we hope to be able to delineate such local variations.