Impact history of the Moon

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Supplemental material: animations

1. Introduction (2 pg, 2 figs, 1 table) – Cohen & Bottke
   • What was the state of understanding in 2006?
   • Expectations for bombardment history based on solar system formation and timing
   • Impact flux scenarios: terminal cataclysm, declining bombardment, some kind of hybrid, or none of the above

2. Basin-forming epoch (14 pg, 10 figs, 3 tables)
   2a. Sample evidence
      • Recap of Stoffler and Ryder, discussion of different chronometers and techniques (2 pg, 2 tables) - Norman
      • Revisions to major basin ages during the “Late Heavy Bombardment” era – Imbrium, Serenitatis & Nectaris (3 pg, 2 fig, 1 table) - Norman
      • Sample evidence for earlier major impact events – Nemchin (2 pg, 1 fig)
      • Non-lunar sample ages– brief recap, extensively covered in Annual Reviews – Cohen (2 pg, 2 fig)
      • What were the impactors? – Joy (1 pg, 1 fig)
   2b. Other remote sensing data
      • Basin populations in the GRAIL data and possible chronologies for their formation (Neumann, Frey) (1 pg, 1 fig)
      • Crater counting on basin ejecta (e.g. SPA, Crisium, and Nectaris) (1 pg, 2 fig)
   2c. Solar system dynamical models – Bottke (2 pg, 2 fig, 1+ animations)
      • Brief review here – much more greatly developed in the Annual Reviews chapter

3. Post-basin epoch to present (8 pg, 8 figs)
   3a. LRO and other datasets, improvements to crater counting – refer to Hiesinger & van der Bogert (4 pg, 4 fig)
      • Basin and younger stratigraphic relations (Fassett)
      • Alternative impact chronology (Robbins)
      • Copernicus, Autolycus, Cone updates (Hiesinger)
   3b. Sample constraints
      • Regolith breccias and solar wind implantation, implications for regolith gardening rate - Joy (1 pg, 1 fig)
      • Lunar impact spherules and related constraints - Zellner (1 pg, 1 fig)
   3c. Current meteoroid impact rate – Cohen (total 2 pg 3 fig)
      • Boulder breakdown rate – Mazrouei (1 pg, 1 fig)
      • LRO change detection, LADEE constraints (0.5 pg, 1 fig)
      • MSFC monitoring (0.5 pg, 1 fig)
4. Future work – Bottke & Cohen (2 pg, 1 table)
   • New science topics, identify unresolved problems
   • Science traceability to new missions