

# 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 Stoffer 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