Session 3 Summary
Finding Small NEAs: Current Capabilities and Gaps

Tim Spahr (MPC): *Tutorial on the Process of Finding Small NEAs*

Lance Benner (JPL): *Follow-up Characterization Needs and Issues*

Steve Larson (U of Arizona): *Existing and near-term Ground-based Capabilities and Gaps*

Eva Schunova (U of Hawaii): *Discovery Process for Finding ARM Targets Using Pan-STARRS and New Atlas Telescopes*

Amy Mainzer (JPL): *Existing and Near-term Space-Based Capabilities and Gaps*

Session chairs: Rich Dissly (BATC) and Paul Abell (NASA JSC)

Session 3 Summary

Key points from presentations and discussion

- In the short time frame needed for ARRM, ground based assets offer the best opportunity to increase the viable target set
  - Several ground based assets are being upgraded/developed in time to increase the number of possible targets for ARM : CSS, PS2, and ATLAS are all likely to detect multiple objects/year in the ARRM size range
- Current and near-term space-based assets are better suited to follow-up characterization (IR obs) rather than detection of a large number of small objects
- Very limited time for follow up (days for optical/IR, perhaps weeks for radar) – but low ΔV objects may offer a longer characterization window
- Size uncertainty by visible observations alone can be a factor of 2-3. This propagates into a much larger uncertainty in target volume, mass. IR or radar follow-up critical to reducing this uncertainty

Session 3 Summary (Continued)

- Follow-up by ground based assets is very important to close an orbit in the short time available for small targets; most very faint objects currently “lost”
- Many follow-up limitations are organizational rather than technical
  - Clearing house for follow-up observations at time of discovery, more rapid radiation clearance recommended as key improvements
- Simple upgrades and continued support to both Goldstone and Arecibo are important to support this as a NEA characterization asset
- Determining if a NEA has few meter-class boulders on the surface cannot be done remotely by IR, and limited with radar observations
- Detection of new, small objects by amateurs highly unlikely; the low-hanging fruit has been found.
  - But skilled amateurs still very important for follow-up, characterization of already discovered targets.