Volatile and Dusty: The NEOWISE comet survey.

James Bauer[1], Tommy Grav[2], E. Kramer[1], A. K. Mainzer[1], J. R. Masiero[1], Y. R. Fernandez[3], C. Nugent[4], K. J. Meech[5], C. M. Lisse[6], R. Cutri[4], R. Stevenson[1], S. Sonnett[1], E. L. Wright[7], and The NEOWISE Team

[1]Jet Propulsion Laboratory, California Institute of Technology, USA, [2]Planetary Science Institute, USA, [3]University of Central Florida, USA, [4]Infrared Processing Analysis Center, California Institute of Technology, [5]Institute for Astronomy, University of Hawaii, USA, [6]Applied Physics Laboratory, John Hopkins University, USA, [7]University of California, Los Angeles, USA

The 163 comets observed during the WISE/NEOWISE prime mission represent the largest infrared survey to date of comets, providing constraints on dust, nucleus size, and CO + CO_2 production. The sample includes 57 long-period comets, as well as over 106 short-period comets, from a variety of cometary dynamical sub-classes. We present detailed analyses of the WISE/NEOWISE comet discoveries, and discuss observations of the active comets showing 4.6 micron band excess. We determine size constraints for the majority of the comets in the sample using coma extraction techniques. We also discuss dust tail analysis determining particle size and ejection time constraints. Finally, find a possible relation between dust and CO + CO_2 production, as well as possible differences in the sizes of long and short period comet nuclei.