



NEO Program Status

Small Bodies Assessment Group Mtg #13

Lindley Johnson

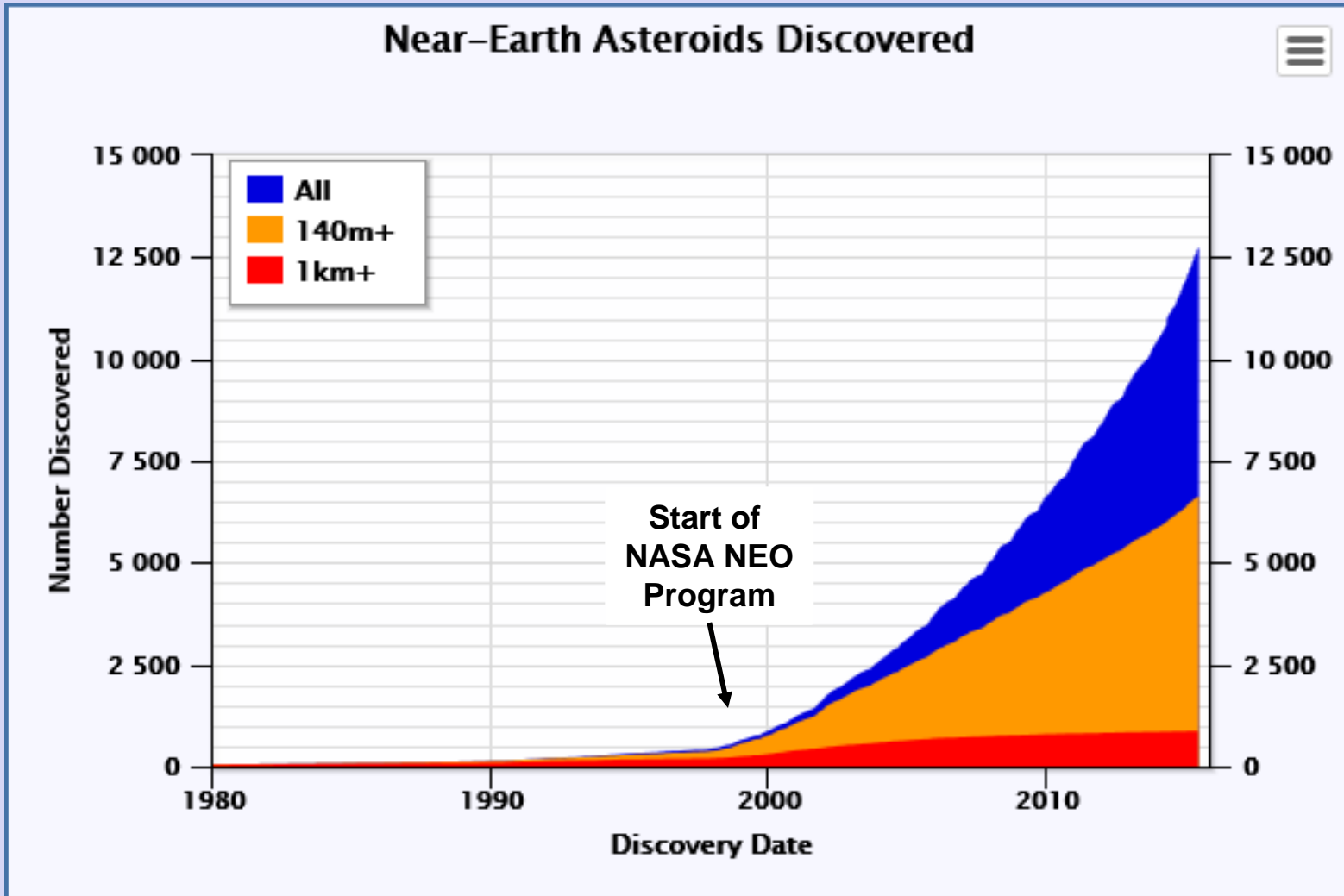
Near Earth Object Program Executive
Planetary Defense Coordination Office

NASA HQ

June 30, 2015



Known Near Earth Asteroid Population



As of
06/01/15
12,644

Also 101
comets

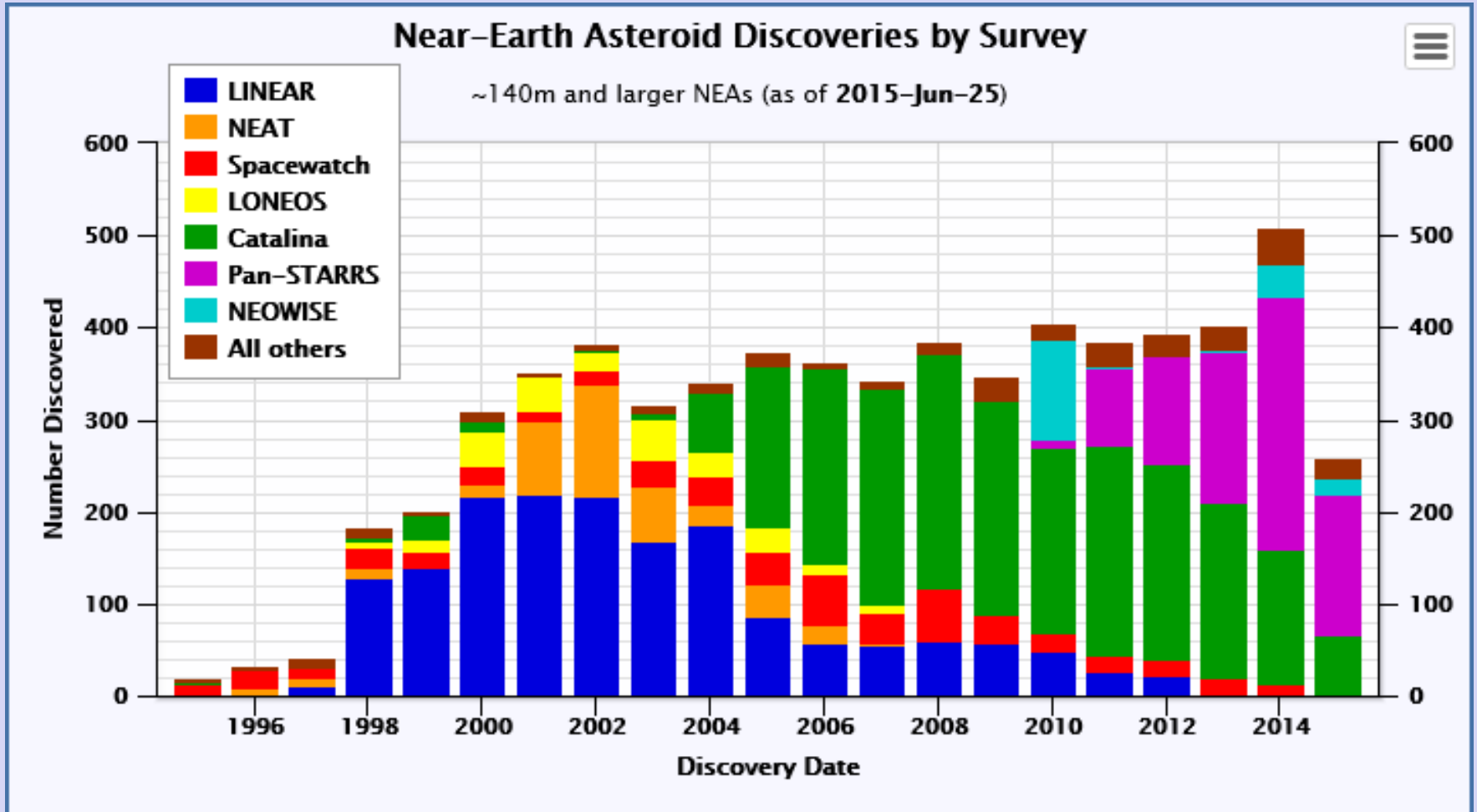
1588
Potentially
Hazardous
Asteroids

872

153 PHAs



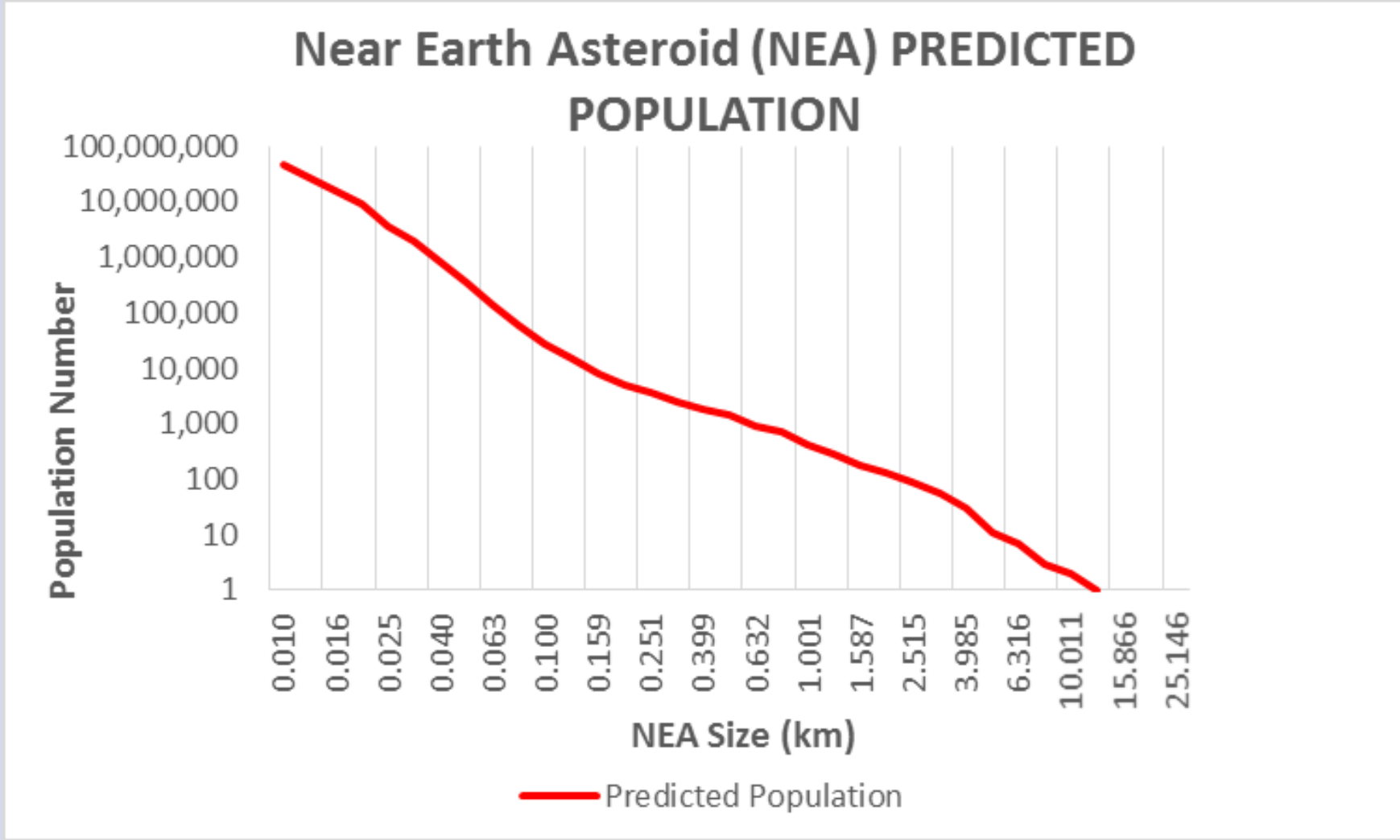
Growth in Capability



As more capable telescopes are added, discoveries include more <140m NEOs

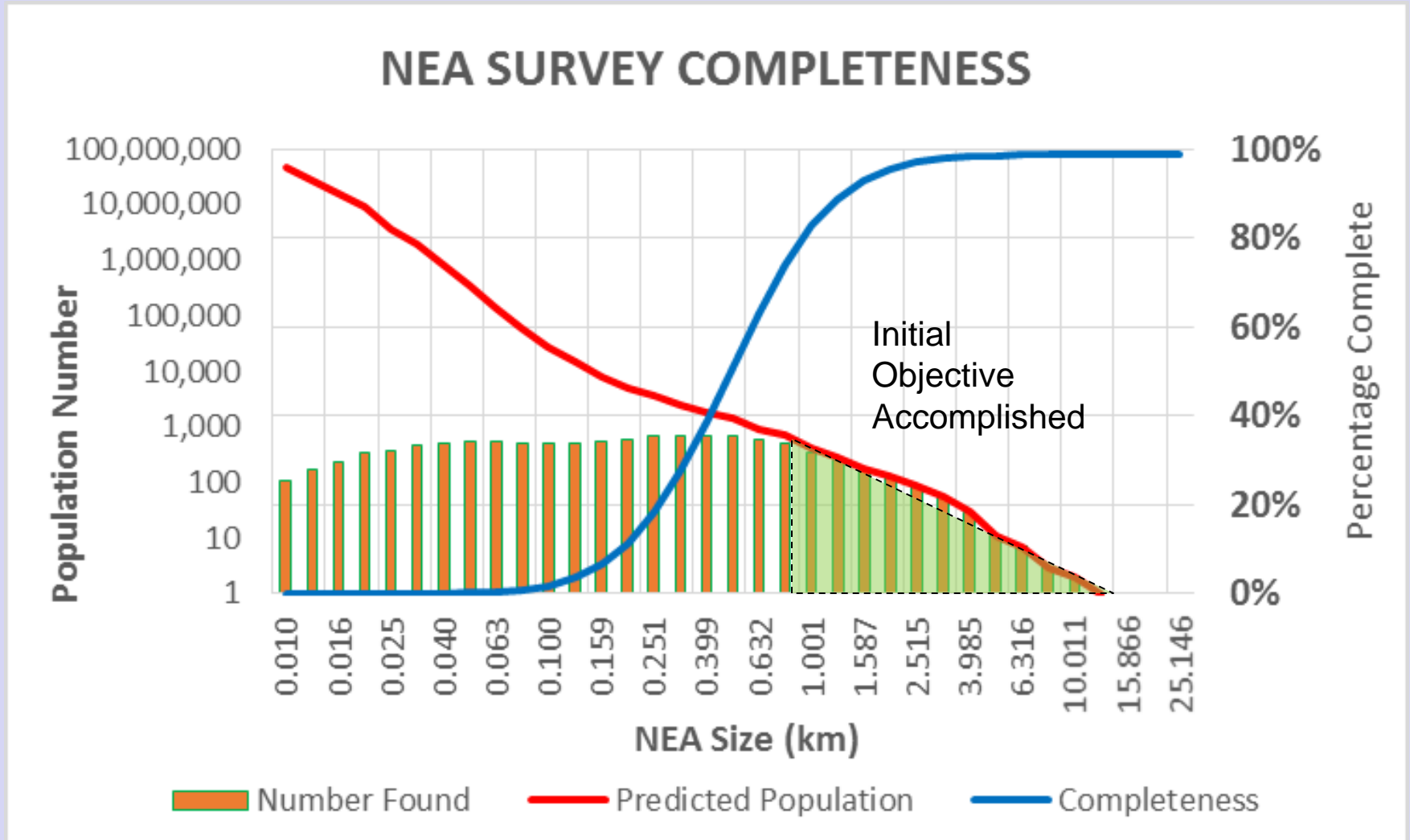


Near Earth Asteroid Survey Status



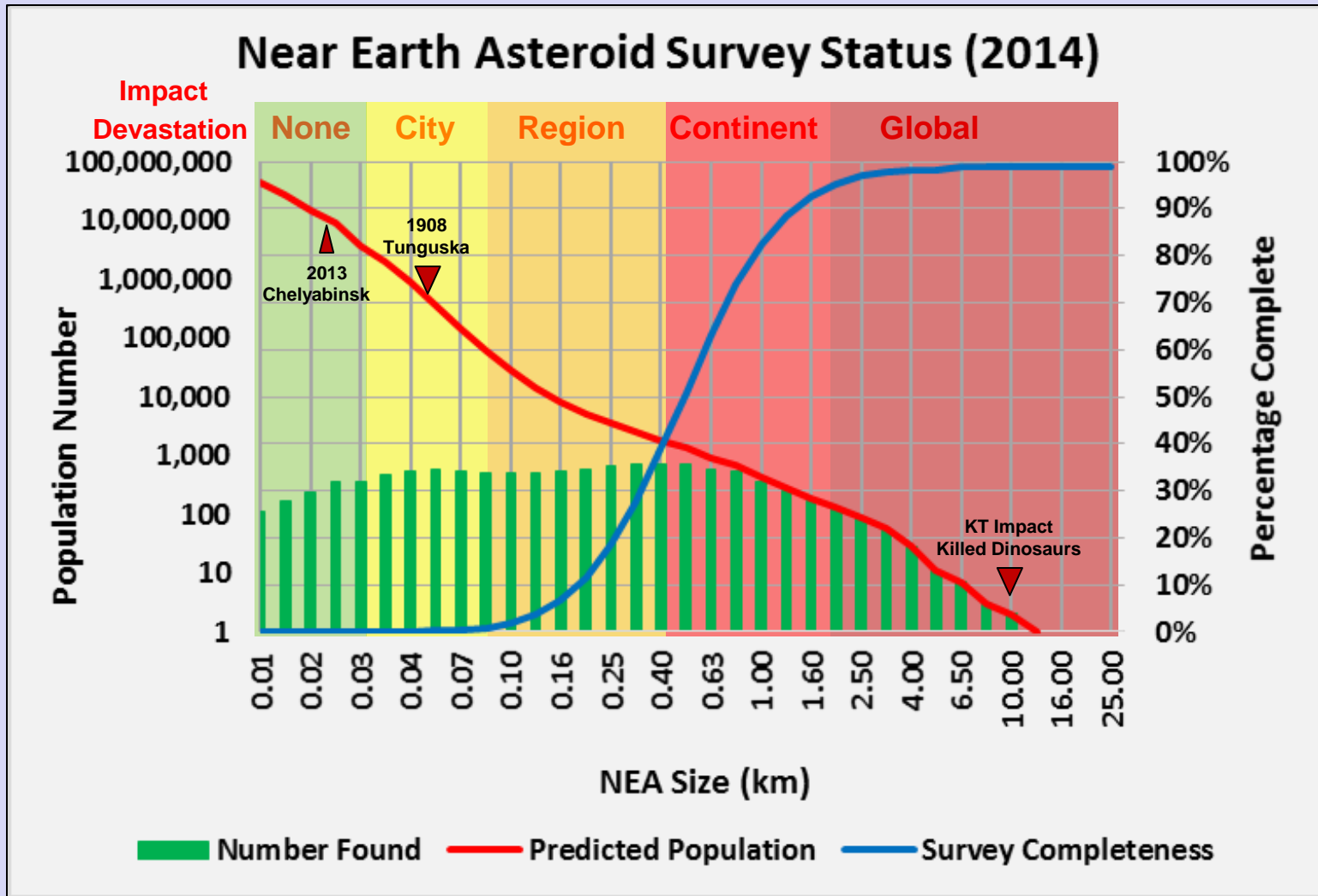


Near Earth Asteroid Survey Status



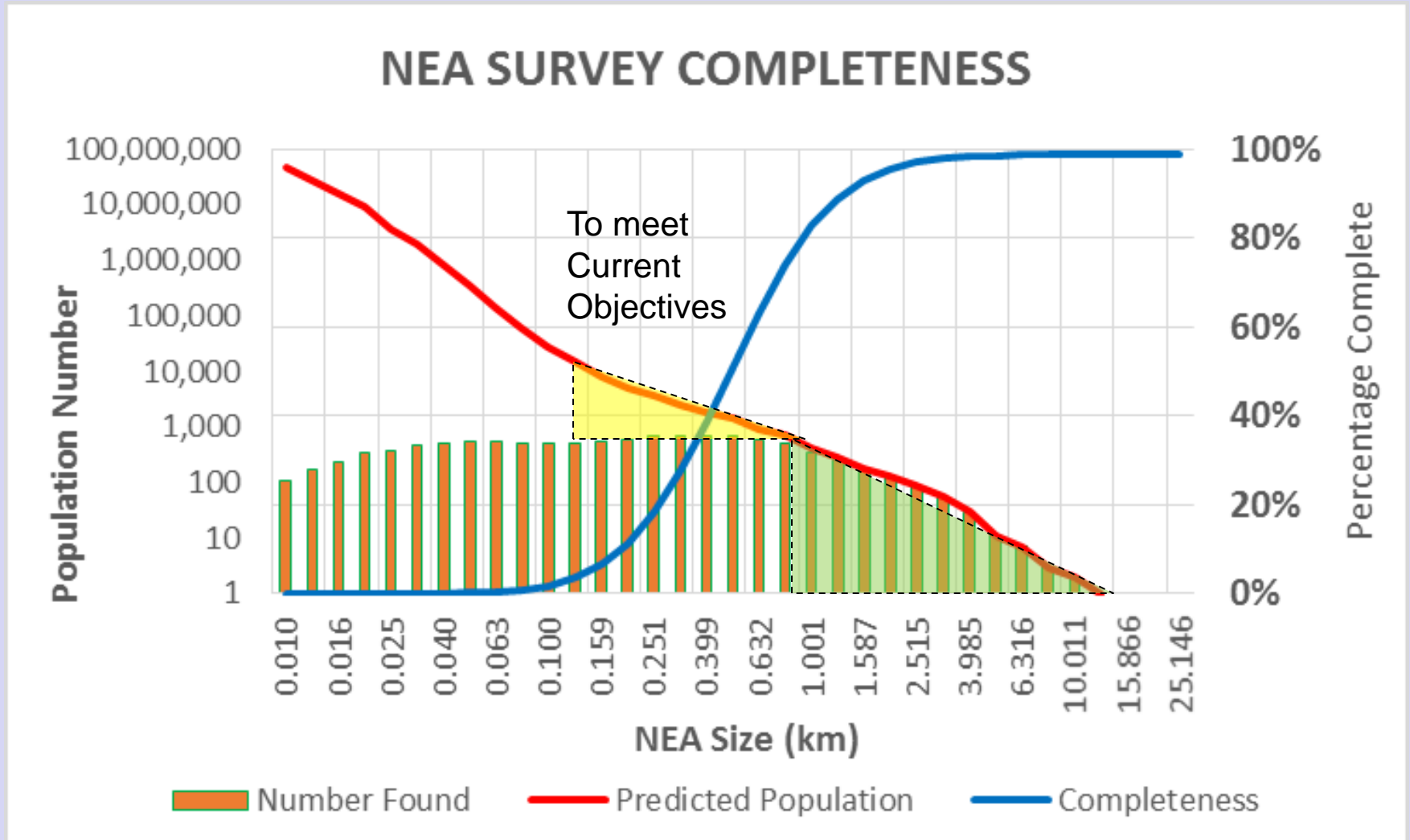


Near Earth Asteroid Survey Status





Near Earth Asteroid Survey Status



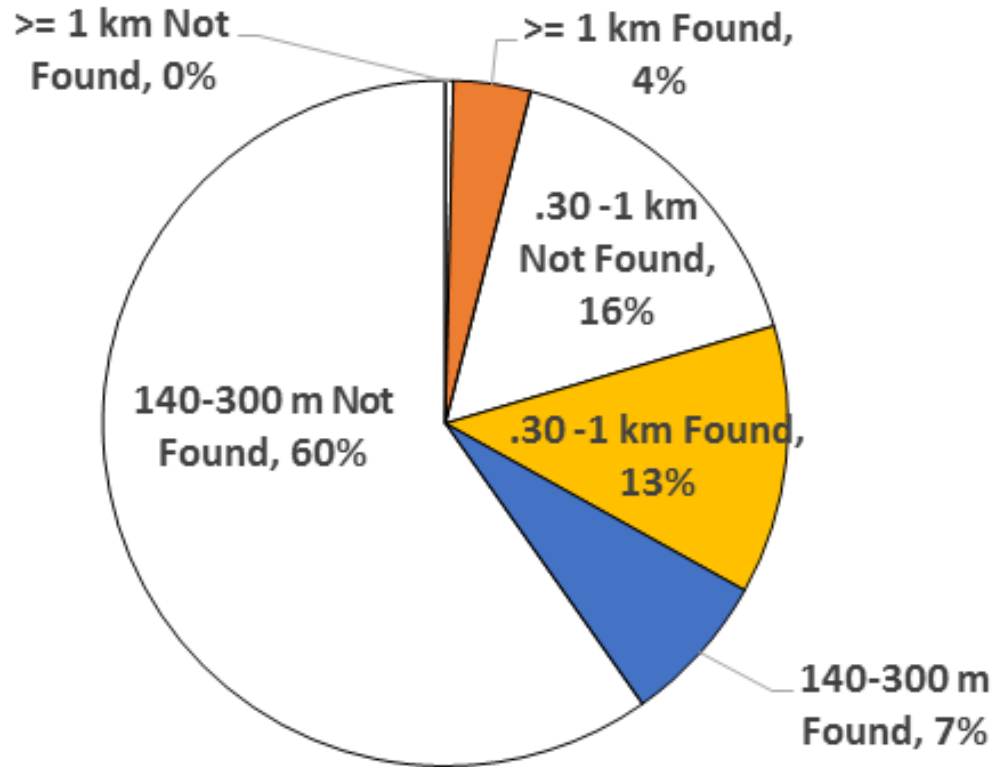


Near Earth Asteroid Survey Status

Alternative Graphic

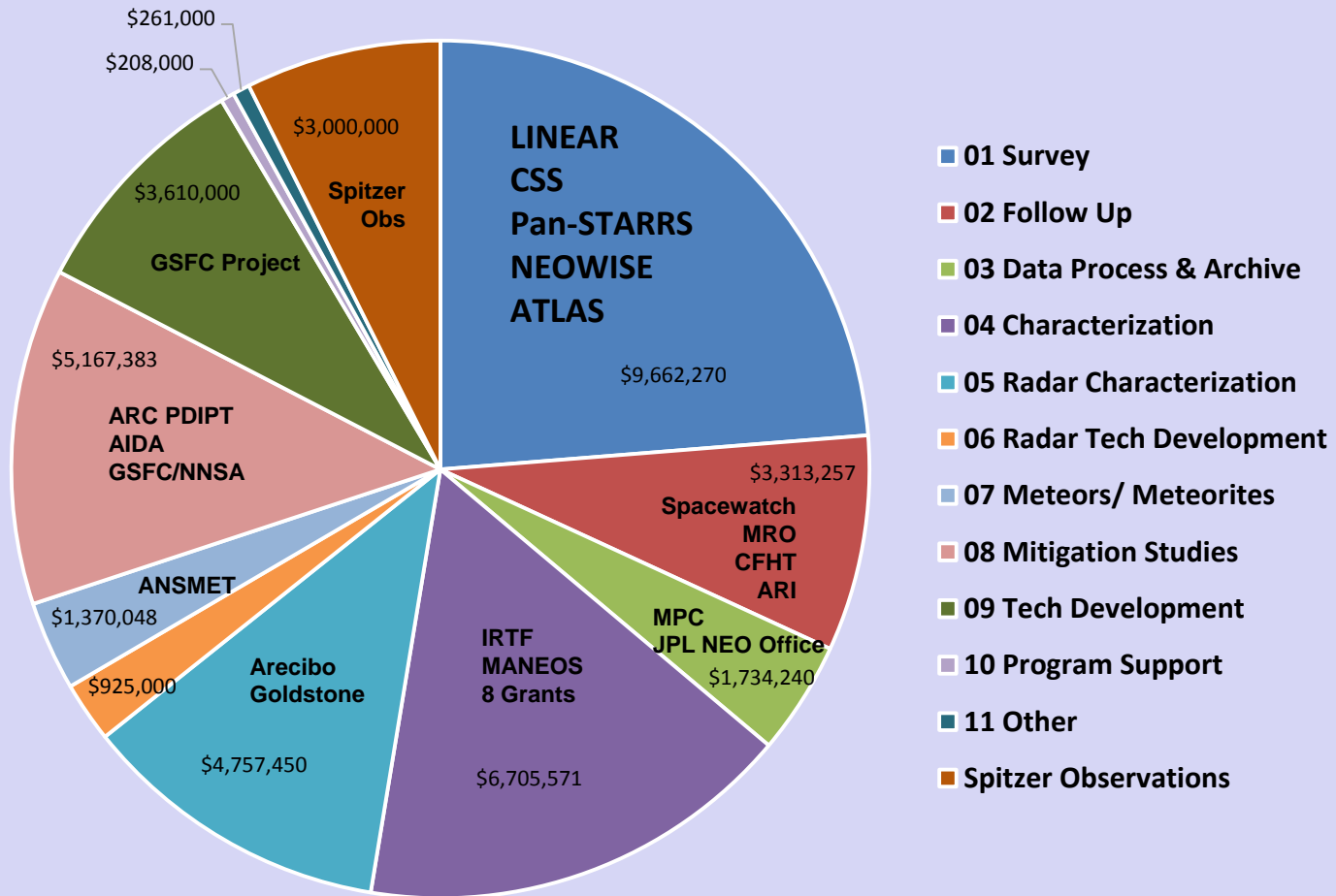
Population ≥ 140 meters in estimated size = 100%

NEO Survey Status





NEO Program FY2015 (\$40M)





NASA's NEO Search Program

(Current Survey Systems)



Minor Planet Center (MPC)

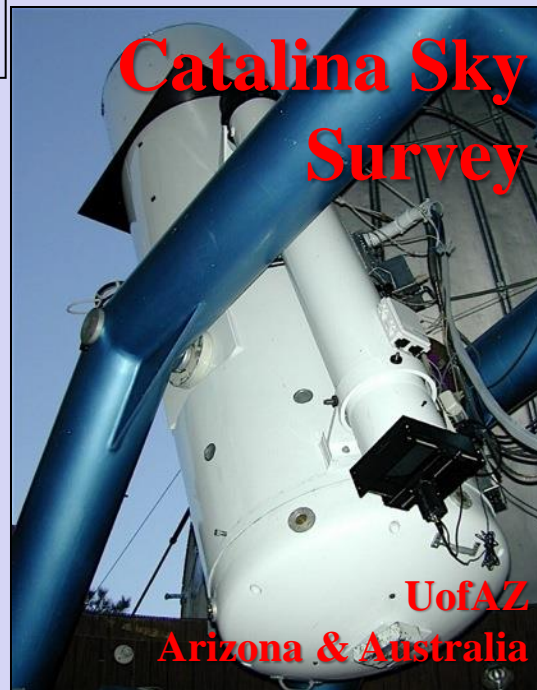
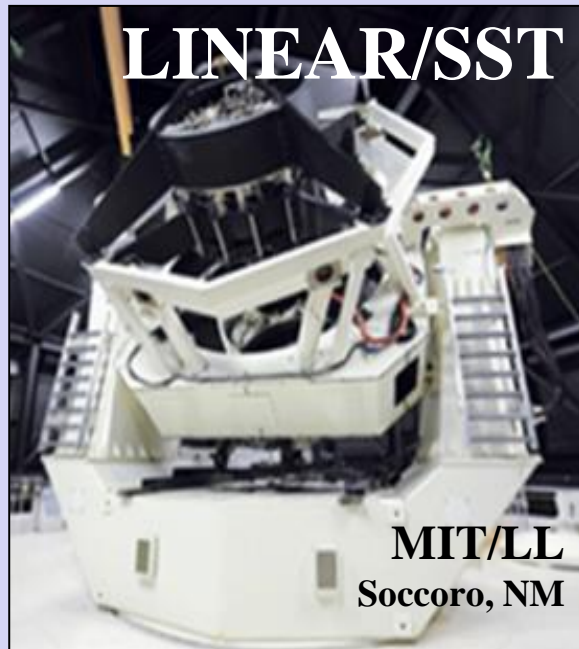
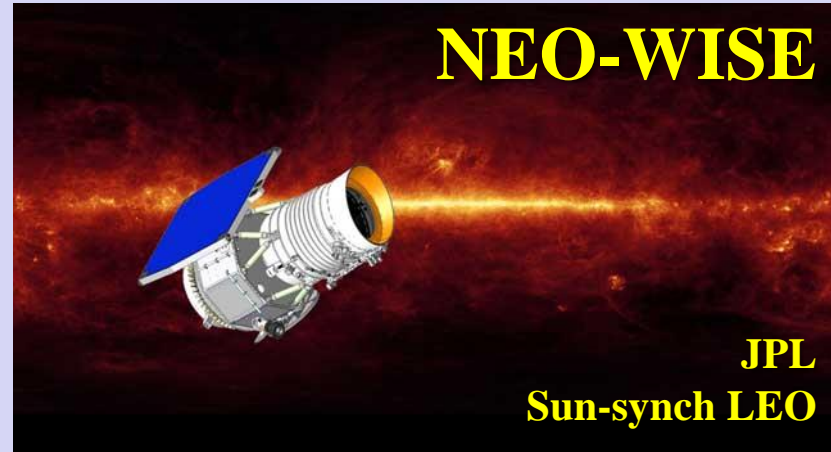
- IAU sanctioned
- Int'l observation database
- Initial orbit determination

<http://minorplanetcenter.net/>

NEO Dynamics Office @ JPL

- Program coordination
- Precision orbit determination
- Automated SENTRY

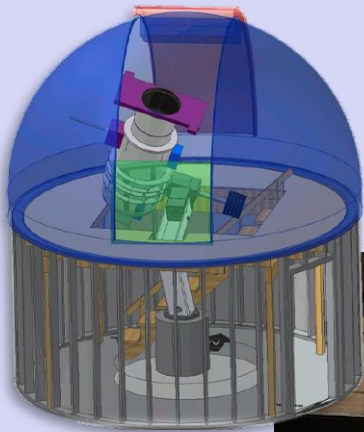
<http://neo.jpl.nasa.gov/>



Near Term Impact Warning

Asteroid Terrestrial-impact Last Alert System –ATLAS*:

A project to patrol the entire night sky every night in search of incoming asteroids

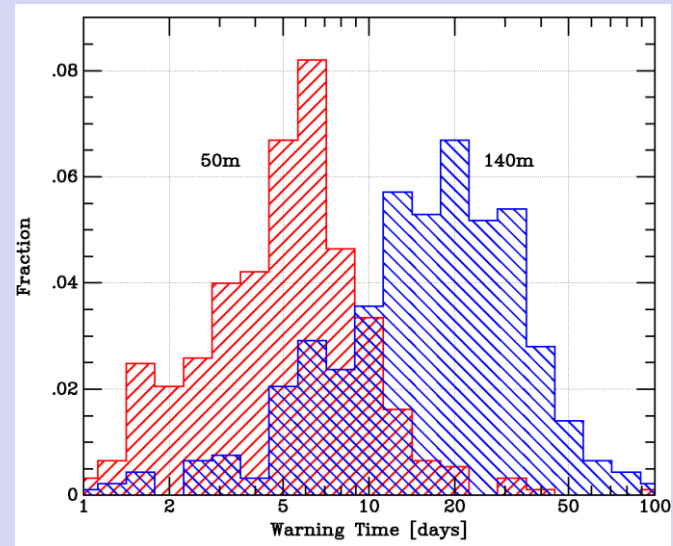


A geographically dispersed network (~ 6 sites) of small coupled telescopes observing “shallow but wide” to provide more complete sky coverage for warning of near-term impact threats



ATLAS telescope first article

*Courtesy University of Hawaii Institute for Astronomy





PDC 2015 Report Recommendations

(not yet endorsed by NASA)



1. Increase discovery rate for smaller NEOs
 - Down to 30 to 50 meters in estimated size
2. Test and verify deflection technologies
 - AIDA and ARM cited as missions with potential
3. Develop framework for use of nuclear explosives for PD
4. Reduce uncertainties for deflection/disruption
 - Calls for better characterization capabilities
5. Increase understanding of impact effects
 - Information for decisions to take smaller impacts
6. Build international cooperation on Planetary Defense
 - AIDA and SMPAG cited
7. Develop better risk communications plan
 - Potential survey of public understanding of asteroid risk



NEO Program Organization

Current Status

