

National Aeronautics and Space Administration



A Grand Challenge: Find and Plan for All Asteroid Threats

UNCOUOS

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Grand Challenge
Program Executive

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Agency Grand Challenges

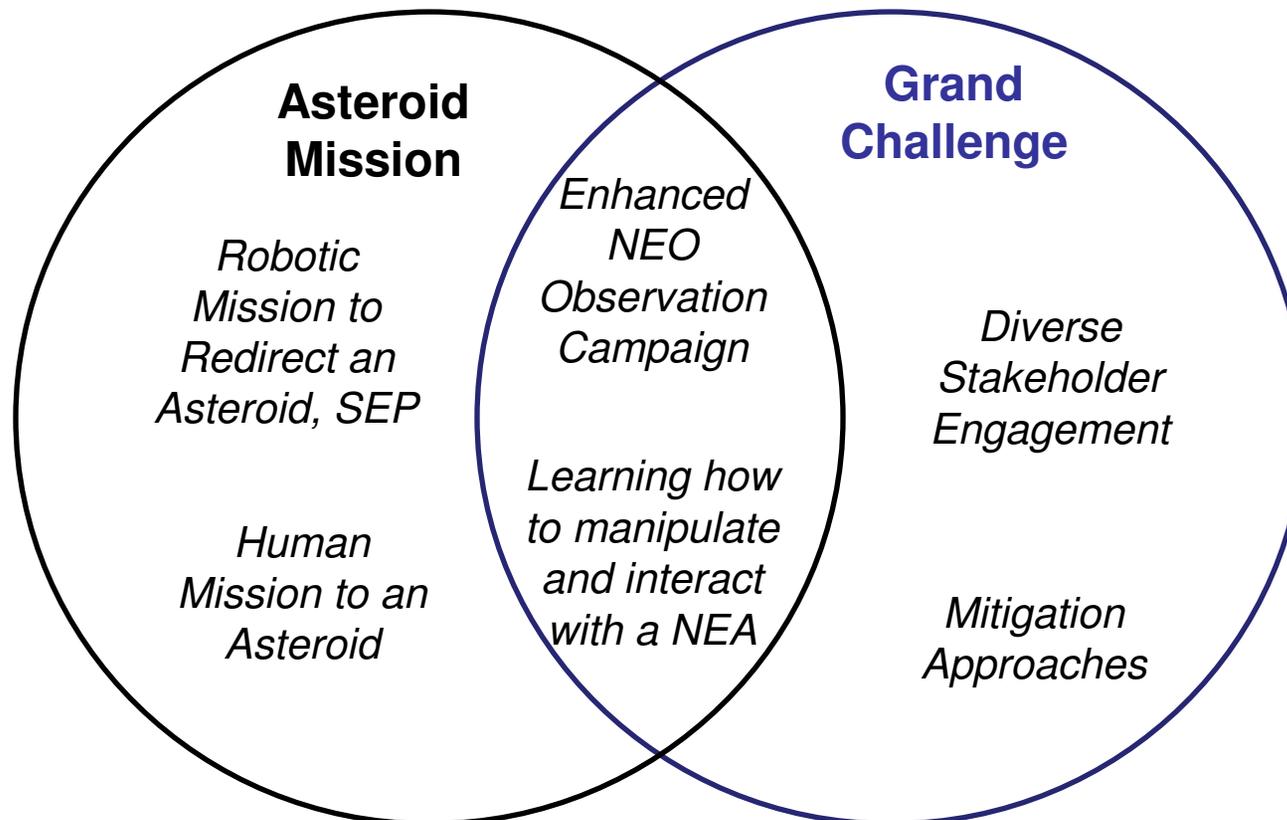


- A large-scale effort that requires activities and contributions beyond NASA's scope--this is a new way of doing business at NASA
- Serve as a “North Star” for high-impact, multi-disciplinary collaborations and public-private partnerships
- Leverages a variety of sources of partnership and outside collaboration (interagency, international, industry, academia, NGOs, citizens, particularly non-traditional partners)

FY14 Asteroid Initiative: What and How



Asteroid Initiative



Both sets of activities leverage existing NASA work while amplifying participatory engagement to accomplish their individual objectives and synergize for a greater collective purpose.

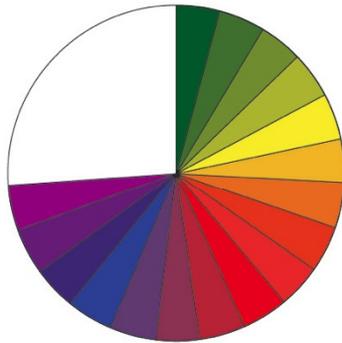
Overall Grand Challenge Consists of Five Main Segments



Find all asteroid threats to
human populations
and know what to do about them



Contributors to the Cause



NASA Contributors

- NEOO (SMD) Program
- NEO Program Office at JPL
- Minor Planet Center (Smithsonian Astrophysical Observatory)
- JRP (HEO) Program
- Asteroid Redirect Mission: Identify, Redirect, and Explore
- STMD (Research Grants, Centennial Challenges)

Current Contributors

External Contributors

- Other U.S. Government Agencies
- International Governments (Space Agencies, IWAN, SMPAG)
- European Space Agency (ESA) Space Situational Awareness Initiative NEO element
- Global Coordination Bodies (UN COPUOS)
- Observatories
- Amateur Astronomers
- Universities/Academia
- Non-Profits/Foundation (B612)
- Commercial Space Industry
- Emerging Space Industry
- Space Advocacy

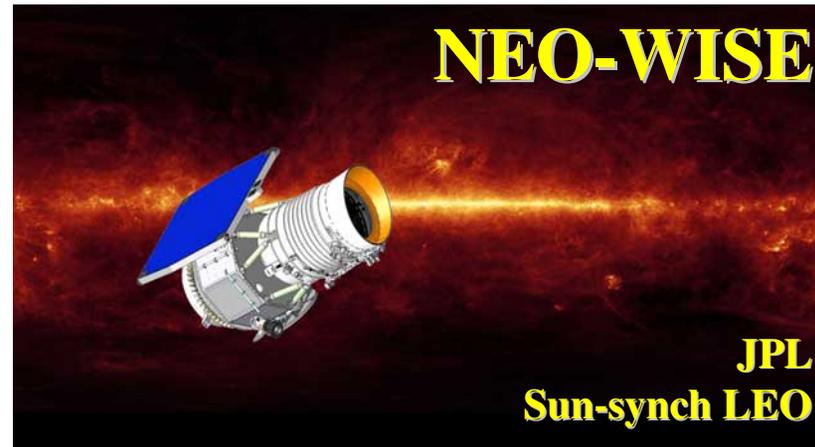
NASA's NEO Search Program

(Current Systems)



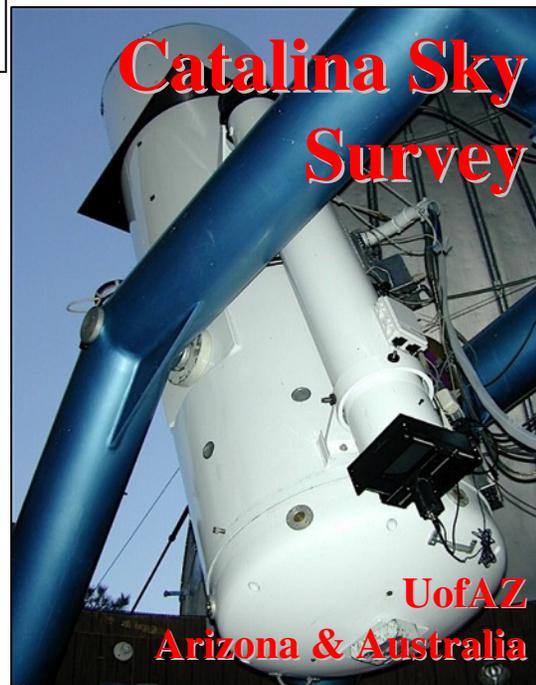
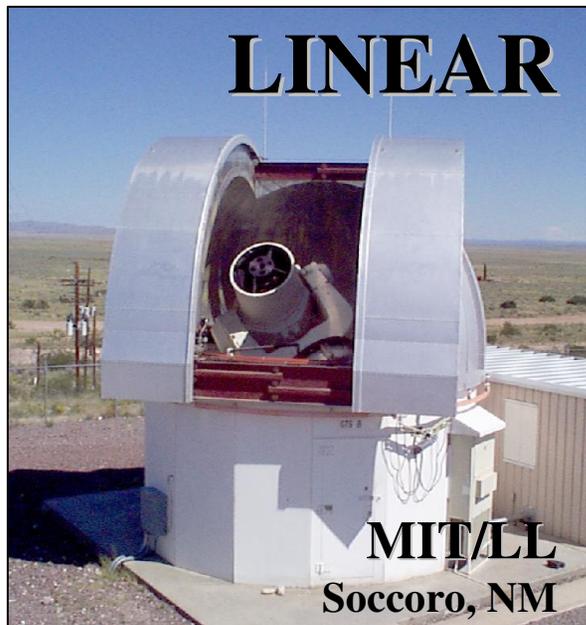
Minor Planet Center (MPC)

- IAU sanctioned
 - Int'l observation database
 - Initial orbit determination
- www.cfa.harvard.edu/iau/mpc.html
- ### NEO Program Office @ JPL
- Program coordination
 - Precision orbit determination
 - Automated SENTRY
- <http://neo.jpl.nasa.gov/>

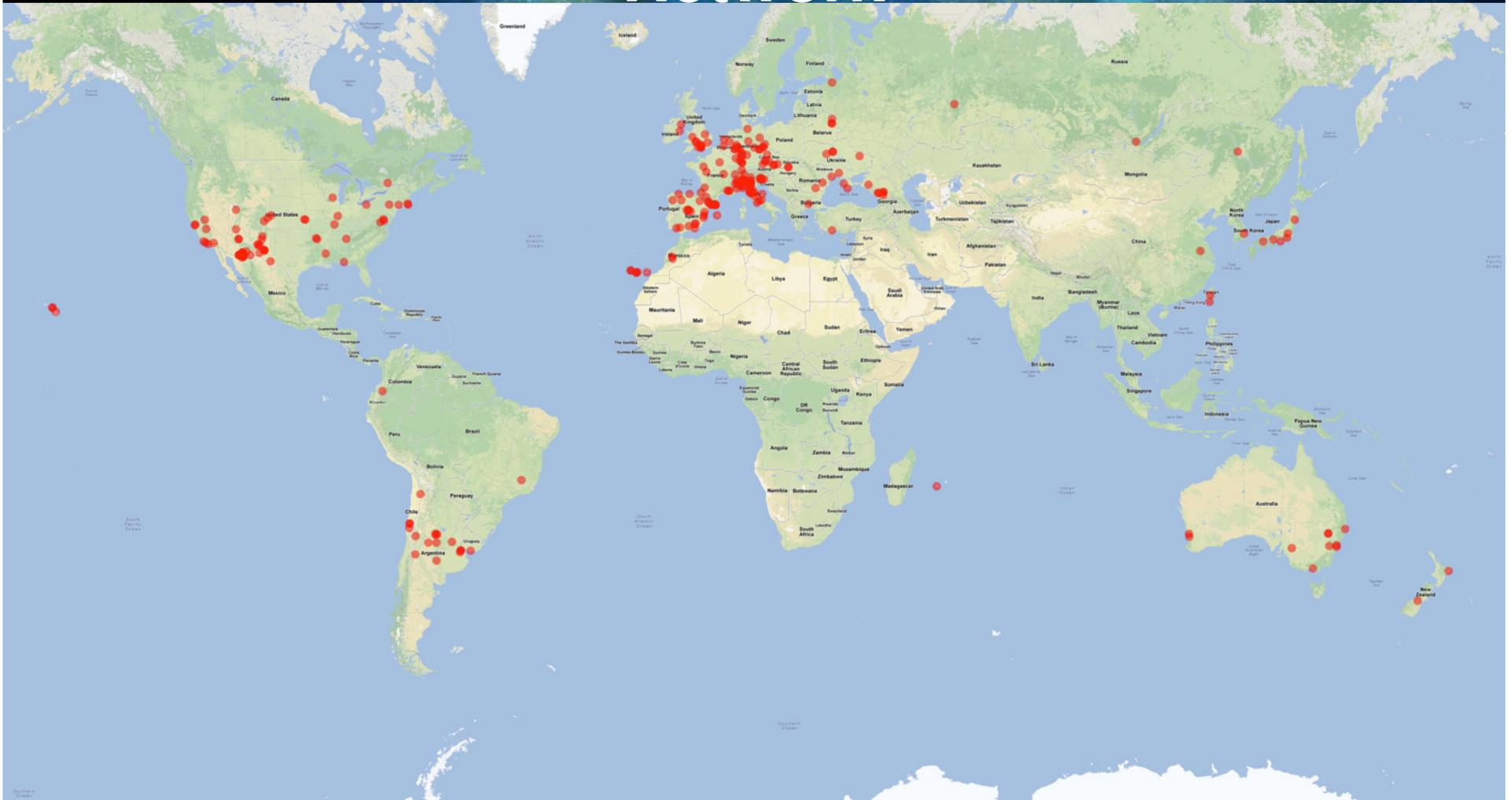


Operations
Jan 2010
Feb 2011,
129 NEAs found

Reactivated
Sep 2013



Existing Worldwide Observing Network



Data from 46 countries in 2012

Potential Contributors to the Cause



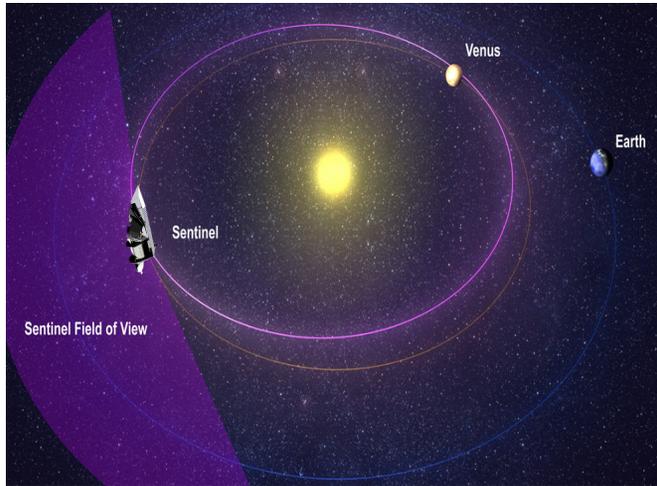
Potential Contributors



Grand Challenge Methods



Public-Private Partnership



Incentive Prizes



Crowdsourcing



Citizen Science



Contact Information



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